

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA  
SAN JOSE DIVISION

UNITED STATES OF AMERICA, )  
 ) CR-18-00258-EJD  
 PLAINTIFF, )  
 ) SAN JOSE, CALIFORNIA  
 VS. )  
 ) MARCH 30, 2022  
 RAMESH "SUNNY" BALWANI, )  
 ) VOLUME 11  
 DEFENDANT. )  
 ) PAGES 1444 - 1682

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TRANSCRIPT OF TRIAL PROCEEDINGS  
BEFORE THE HONORABLE EDWARD J. DAVILA  
UNITED STATES DISTRICT JUDGE

A P P E A R A N C E S:

FOR THE PLAINTIFF: UNITED STATES ATTORNEY'S OFFICE  
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OAKLAND, CALIFORNIA 94612

(APPEARANCES CONTINUED ON THE NEXT PAGE.)

OFFICIAL COURT REPORTER:

IRENE L. RODRIGUEZ, CSR, RMR, CRR  
CERTIFICATE NUMBER 8074

PROCEEDINGS RECORDED BY MECHANICAL STENOGRAPHY  
TRANSCRIPT PRODUCED WITH COMPUTER

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32                                        UNITED STATES FOOD & DRUG  
33                                        ADMINISTRATION  
34                                        BY:    GEORGE SCAVDIS

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**MARK PANDORI**

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SAN JOSE, CALIFORNIA

MARCH 30, 2022

P R O C E E D I N G S

(COURT CONVENED AT 9:03 A.M.)

(JURY IN AT 9:03 A.M.)

THE COURT: THANK YOU AGAIN FOR YOUR COURTESY.

WE'RE BACK ON THE RECORD IN THE BALWANI MATTER. ALL  
COUNSEL ARE PRESENT.

MS. CHEUNG IS PRESENT ON THE STAND.

GOOD MORNING, LADIES AND GENTLEMEN OF THE JURY. IT'S NICE  
TO SEE YOU ALL AGAIN.

I HOPE YOU HAD PLEASANT TRAVELS, THOSE OF YOU WHO  
TRAVELED, AND A PLEASANT TIME OFF.

LET ME, BEFORE WE BEGIN, LET ME ASK YOU THAT QUESTION  
AGAIN, PLEASE.

DURING OUR BREAK, HAVE ANY OF YOU HAD OCCASION TO EITHER  
DO ANY INDEPENDENT RESEARCH TO COMMUNICATE, TO READ, SEE, OR  
LEARN ANYTHING ABOUT THIS CASE? IF SO, WOULD YOU PLEASE RAISE  
YOUR HAND.

I SEE NO HANDS.

THANK YOU VERY MUCH, LADIES AND GENTLEMEN. I APPRECIATE  
IT.

MR. COOPERSMITH, WOULD YOU LIKE TO CONTINUE YOUR  
EXAMINATION.

MR. COOPERSMITH: YES, YOUR HONOR. THANK YOU.

THE COURT: MS. CHEUNG, I'LL REMIND YOU, YOU'RE

09:04AM 1  
09:04AM 2  
09:04AM 3  
09:04AM 4  
09:04AM 5  
09:04AM 6  
09:04AM 7  
09:04AM 8  
09:04AM 9  
09:04AM 10  
09:04AM 11  
09:04AM 12  
09:04AM 13  
09:04AM 14  
09:04AM 15  
09:05AM 16  
09:05AM 17  
09:05AM 18  
09:05AM 19  
09:05AM 20  
09:05AM 21  
09:05AM 22  
09:05AM 23  
09:05AM 24  
09:05AM 25

STILL UNDER OATH.

IF YOU COULD JUST STATE YOUR NAME AGAIN, PLEASE.

THE WITNESS: MY NAME IS ERIKA CHEUNG.

THE COURT: THANK YOU.

**(GOVERNMENT'S WITNESS, ERIKA CHEUNG, WAS PREVIOUSLY  
SWORN.)**

**CROSS-EXAMINATION (RESUMED)**

BY MR. COOPERSMITH:

Q. WELCOME BACK, MS. CHEUNG.

A. GOOD MORNING.

Q. GOOD MORNING.

I WANT TO PICK UP WHERE WE LEFT OFF AND TALK ABOUT  
EXHIBIT 3741A, WHICH I THINK WAS THE LAST EXHIBIT THAT WE WERE  
LOOKING AT BEFORE WE BROKE LAST WEEK. IT SHOULD BE IN THE  
GOVERNMENT'S BINDER.

DO YOU HAVE THAT IN FRONT OF YOU?

A. YES.

Q. THANK YOU.

IF YOU COULD TURN IN PARTICULAR TO THE PAGE, AT THE VERY  
BOTTOM IN THE MIDDLE THERE ARE PAGE NUMBERS, AND THE PAGE I  
WOULD LIKE TO REFER YOU TO IS PAGE 6.

AND DO YOU REMEMBER ON DIRECT EXAMINATION, AND I KNOW IT'S  
BEEN OVER A WEEK NOW, BUT ON DIRECT EXAMINATION MR. BOSTIC WAS  
ASKING YOU ABOUT THIS PAGE, AND YOU WERE IDENTIFYING SOME OF  
THE TESTS THAT YOU THOUGHT WERE RUN ON THE EDISON DEVICE THAT

09:05AM 1 THERANOS HAD.

09:05AM 2 DO YOU REMEMBER THAT?

09:05AM 3 A. YES.

09:05AM 4 Q. OKAY. AND I JUST WANT TO GO OVER THOSE WITH YOU A BIT.

09:05AM 5 YOU SAID ON DIRECT THAT YOU THOUGHT THERE WERE ABOUT FIVE  
09:05AM 6 ASSAYS THAT WERE RUNNING ON EDISON?

09:05AM 7 A. YES, I BELIEVE SO.

09:06AM 8 Q. OKAY. AND LET'S JUST GO THROUGH THOSE AND SEE IF YOU CAN  
09:06AM 9 REMEMBER, AND IF NOT, I THINK I CAN HELP YOU REFRESH YOUR  
09:06AM 10 MEMORY.

09:06AM 11 BUT LET'S LOOK FIRST AT THE REPRODUCTIVE HEALTH SECTION.

09:06AM 12 A. YES.

09:06AM 13 Q. AND THEN THERE'S A TEST CALLED ESTRADIOL.

09:06AM 14 DO YOU SEE THAT?

09:06AM 15 A. YES.

09:06AM 16 Q. AND THAT WAS RUN ON EDISON?

09:06AM 17 A. I WASN'T THERE WHEN THAT WAS RUN ON EDISON.

09:06AM 18 Q. OKAY. IT WASN'T RUN ON EDISON WHEN YOU WERE THERE?

09:06AM 19 A. YEAH.

09:06AM 20 Q. OKAY. SO THERE COULD BE TESTS LISTED ON THIS DOCUMENT  
09:06AM 21 THAT WERE AT SOME POINT RUN ON EDISON, BUT IT MIGHT HAVE BEEN  
09:06AM 22 AFTER THE TIME THAT YOU WORKED AT THERANOS?

09:06AM 23 A. THAT IS CORRECT.

09:06AM 24 Q. OKAY. HCG, WAS THAT RUN ON EDISON WHILE YOU WERE THERE?

09:06AM 25 A. YES.

09:06AM 1 Q. OKAY. AND THEN PROLACTIN?

09:06AM 2 A. NO.

09:06AM 3 Q. OKAY. SO IF THAT WAS RUN ON EDISON, YOU WOULDN'T KNOW

09:06AM 4 ANYTHING ABOUT THAT?

09:06AM 5 A. CORRECT.

09:06AM 6 Q. AND JUST TO QUICKLY DIGRESS, IF IT WAS RUN ON EDISON AT

09:07AM 7 SOME OTHER POINT, YOU WOULD EXPECT THAT THERE WOULD BE A

09:07AM 8 VALIDATION REPORT BEFORE IT WAS RUN ON THE CLIA CLINICAL LAB?

09:07AM 9 A. I COULDN'T BE CERTAIN.

09:07AM 10 Q. BUT THAT WAS THE PRACTICE WHEN YOU WERE THERE; RIGHT?

09:07AM 11 A. YES.

09:07AM 12 Q. SO IT COULD BE SOME VALIDATION REPORTS WERE SIGNED AFTER

09:07AM 13 YOU LEFT?

09:07AM 14 A. CORRECT.

09:07AM 15 Q. OR MAYBE YOU JUST DIDN'T KNOW ABOUT THEM?

09:07AM 16 A. CORRECT.

09:07AM 17 Q. AND HOW ABOUT IF YOU GO TO THE VERY BOTTOM OF THE

09:07AM 18 REPRODUCTIVE HEALTH SECTION -- ACTUALLY, BEFORE WE GET TO THE

09:07AM 19 VERY BOTTOM, THERE'S ONE CALLED SEX HORMONE BINDING GLOBULIN,

09:07AM 20 SHBG.

09:07AM 21 DO YOU SEE THAT?

09:07AM 22 A. YES.

09:07AM 23 Q. AND WAS THAT RUN ON EDISON WHILE YOU WERE THERE?

09:07AM 24 A. NO.

09:07AM 25 Q. OKAY. AND THEN TESTOSTERONE, TOTAL?



09:07AM 1 A. THAT WAS.

09:07AM 2 Q. THAT WAS. OKAY.

09:07AM 3 AND THEN IF YOU GO TO THE THYROID SECTION T3, TOTAL --

09:07AM 4 TRIIODOTHYRONINE, TOTAL.

09:07AM 5 DO YOU SEE THAT?

09:07AM 6 A. YES.

09:07AM 7 Q. AND THAT WAS RUN ON EDISON WHILE YOU WERE THERE?

09:08AM 8 A. YES.

09:08AM 9 Q. AND T4, FREE -- THYROXINE, FREE?

09:08AM 10 A. CORRECT.

09:08AM 11 Q. AND THAT WAS RUN WHILE YOU WERE THERE?

09:08AM 12 A. YES.

09:08AM 13 Q. THANK YOU. AND THEN T4, TOTAL -- THYROXINE, TOTAL?

09:08AM 14 A. THAT WASN'T RUN.

09:08AM 15 Q. SO IF IT WAS RUN ON EDISON, IT COULD HAVE BEEN AFTER YOUR

09:08AM 16 TIME?

09:08AM 17 A. YES.

09:08AM 18 Q. AND THEN THYROID STIMULATING HORMONE, TSH?

09:08AM 19 A. THAT WAS RUN.

09:08AM 20 Q. OKAY. AND THEN GO TO THE, IF YOU COULD, GO TO THE SECTION

09:08AM 21 ON ALPHABETICAL TESTS.

09:08AM 22 DO YOU SEE THAT?

09:08AM 23 A. YES.

09:08AM 24 Q. AND THEN TOWARDS THE END OR IN THE MIDDLE OF THE VERY LAST

09:08AM 25 COLUMN THERE'S ONE FOR PSA, TOTAL.

09:08AM 1 WAS THAT RUN ON THE EDISON WHILE YOU WERE THERE?

09:08AM 2 A. YES.

09:08AM 3 Q. AND THEN GOING DOWN, VITAMIN B-12?

09:08AM 4 A. NO, THAT WASN'T RUN WHILE I WAS THERE.

09:08AM 5 Q. OKAY. AND THEN VITAMIN D 25-OH?

09:08AM 6 A. CORRECT.

09:08AM 7 Q. AND THAT WAS ONE THAT WAS RUN WHILE YOU WERE THERE?

09:09AM 8 A. YES.

09:09AM 9 Q. OKAY. AND THEN ALL OF THE ONES THAT I NAMED, YOU

09:09AM 10 UNDERSTAND THAT ALL OF THEM, INCLUDING THE ONES THAT WERE RUN

09:09AM 11 ON EDISON WHILE YOU WERE THERE, ARE ALL IMMUNOASSAYS?

09:09AM 12 A. I COULDN'T BE CERTAIN FOR ALL OF THEM.

09:09AM 13 Q. YOU'RE NOT SURE WHICH ONES ARE IMMUNOASSAYS AND WHICH ONES

09:09AM 14 AREN'T?

09:09AM 15 A. NOT FOR THE ONES I DIDN'T WORK WITH.

09:09AM 16 Q. OKAY. BUT FOR THE ONES YOU WORKED WITH AND YOU

09:09AM 17 IDENTIFIED, YOU UNDERSTAND THAT THOSE WERE IMMUNOASSAYS?

09:09AM 18 A. YES.

09:09AM 19 Q. AND THEN THE OTHER ONES, YOU'RE NOT SURE WHETHER THEY ARE

09:09AM 20 OR AREN'T?

09:09AM 21 A. CORRECT.

09:09AM 22 Q. ALL RIGHT. AND IF YOU GO TO THE FIRST PAGE OF THE

09:09AM 23 EXHIBIT, WHICH IS PAGE 1, AND THEN YOU SEE THERE'S AN ASSAY

09:09AM 24 CALLED -- AT THE TOP AND THEY'RE ALL ALPHABETICAL SO WE CAN

09:09AM 25 FIND THEM -- ALPHA-1-ACID GLYCOPROTEIN.

09:09AM 1 DO YOU SEE THAT?

09:09AM 2 A. YES.

09:09AM 3 Q. AND DO YOU UNDERSTAND THAT THAT IS ALSO AN IMMUNOASSAY?

09:09AM 4 A. NO.

09:09AM 5 Q. YOU DON'T KNOW ONE WAY OR THE OTHER?

09:09AM 6 A. EXACTLY, I DON'T KNOW ONE WAY OR THE OTHER.

09:09AM 7 Q. HOW ABOUT GOING DOWN THE PAGE APOLIPOPROTEIN A-1

09:10AM 8 (APO A-1)?

09:10AM 9 A. I DON'T KNOW.

09:10AM 10 Q. YOU DIDN'T KNOW WHETHER THIS WAS AN IMMUNOASSAY OR NOT?

09:10AM 11 A. I DIDN'T WORK ON THIS ONE, NO.

09:10AM 12 Q. OKAY. AND THEN RIGHT UNDER THAT APOLIPOPROTEIN B (APO B).

09:10AM 13 DO YOU UNDERSTAND THAT THAT IS ALSO AN IMMUNOASSAY?

09:10AM 14 A. I DIDN'T WORK ON THIS ONE, EITHER.

09:10AM 15 Q. AND GOING DOWN TO THE B'S, BETA-2 MICROGLOBULIN.

09:10AM 16 DO YOU UNDERSTAND THAT'S AN ASSAY?

09:10AM 17 A. NO.

09:10AM 18 Q. AND THEN -- THESE ARE HARD WORDS. I'LL SLOW DOWN.

09:10AM 19 UNDER THE C'S IN THE MIDDLE OF THE SECOND COLUMN THERE'S

09:10AM 20 ONE CALLED COMPLEMENT COMPONENT 3 ANTIGEN.

09:10AM 21 DO YOU SEE THAT?

09:10AM 22 A. YES.

09:10AM 23 Q. AND YOU UNDERSTAND THAT'S AN IMMUNOASSAY?

09:10AM 24 A. NO. AGAIN, I DON'T KNOW.

09:10AM 25 Q. OKAY. COMPLEMENT COMPONENT 4 ANTIGEN, THE NEXT ONE, YOU

09:11AM 1 UNDERSTAND THAT'S AN IMMUNOASSAY?

09:11AM 2 A. I DON'T KNOW.

09:11AM 3 Q. HOW ABOUT GOING DOWN TOWARDS THE END OF THE C'S,  
09:11AM 4 CYSTATIN C?

09:11AM 5 A. AGAIN, I DON'T KNOW.

09:11AM 6 Q. GOING TO THE NEXT PAGE.

09:11AM 7 DO YOU UNDERSTAND THAT FERRITIN, UNDER THE F'S, IS AN  
09:11AM 8 ANALYTE THAT COULD BE MEASURED USING AN IMMUNOASSAY?

09:11AM 9 A. AGAIN, I DON'T KNOW.

09:11AM 10 Q. AND THEN IF YOU GO TO THE I'S, IGA, DO YOU UNDERSTAND  
09:11AM 11 WHETHER THAT'S AN IMMUNOASSAY?

09:11AM 12 A. I DIDN'T WORK ON ANY OF THE --

09:11AM 13 Q. OR IGG?

09:11AM 14 A. IN THE CONTEXT OF THERANOS, NO, I DIDN'T. I DON'T.

09:11AM 15 Q. OKAY. BUT DO YOU UNDERSTAND IN ANY WAY THAT IGG IS AN  
09:11AM 16 IMMUNOASSAY OR COULD BE MEASURED USING AN IMMUNOASSAY?

09:11AM 17 A. IT COULD BE, BUT I DIDN'T KNOW AT THAT TIME WHAT THESE  
09:11AM 18 WERE USED FOR.

09:11AM 19 Q. OKAY.

09:11AM 20 A. OR USED WITH.

09:11AM 21 Q. THANK YOU.

09:11AM 22 AND THEN IGM, DO YOU UNDERSTAND THAT THAT COULD BE  
09:12AM 23 MEASURED USING AN IMMUNOASSAY?

09:12AM 24 A. AGAIN, I DON'T KNOW.

09:12AM 25 Q. OKAY. IF YOU TURN TO THE NEXT PAGE, PAGE 3 OF THE

09:12AM 1

EXHIBIT.

09:12AM 2

UNDER THE P'S, PREALBUMIN, DO YOU SEE THAT?

09:12AM 3

A. YES.

09:12AM 4

Q. AND DO YOU UNDERSTAND THAT THAT IS ONE THAT ALSO COULD BE

09:12AM 5

MEASURED USING AN IMMUNOASSAY?

09:12AM 6

A. AGAIN, I DON'T KNOW.

09:12AM 7

Q. AND THEN UNDER THE S'S, STREPTOLYSIN O ANTIBODY TITER

09:12AM 8

(ASO).

09:12AM 9

DO YOU SEE THAT?

09:12AM 10

A. AGAIN, I DON'T KNOW.

09:12AM 11

Q. YOU DON'T KNOW IF IT'S AN IMMUNOASSAY OR NOT?

09:12AM 12

A. NOT IN THE CONTEXT OF WHEN I WORKED AT THERANOS, NO.

09:12AM 13

Q. OKAY. BUT DO YOU UNDERSTAND FROM ANY CONTEXT THAT IT

09:12AM 14

COULD BE MEASURED USING AN IMMUNOASSAY SYSTEM?

09:12AM 15

A. FOR THE ANTIBODY, SURE, YEAH, IT COULD.

09:12AM 16

Q. OKAY. NOW, YOU TESTIFIED ON DIRECT THAT YOU THOUGHT THAT

09:13AM 17

THE EDISON COULD ONLY DO 12 TESTS?

09:13AM 18

A. I TESTIFIED THAT THE EDISON ONLY DID 12 TESTS.

09:13AM 19

Q. OKAY. BUT LET'S JUST MAKE SURE WE'RE CLEAR ON THAT.

09:13AM 20

AM I CORRECT IN SAYING THAT YOU DON'T KNOW WHETHER THE

09:13AM 21

EDISON COULD DO MORE THAN 12 TESTS, YOU JUST OBSERVED WHILE YOU

09:13AM 22

WERE THERE IT DID SOME TESTS AND YOU AT SOME POINT BECAME AWARE

09:13AM 23

THAT IT ACTUALLY DID 12 TESTS?

09:13AM 24

A. CAN YOU REPEAT THAT QUESTION?

09:13AM 25

Q. SURE. SORRY.

09:13AM 1 ARE YOU AWARE THAT -- DID YOU TESTIFY ON DIRECT THAT THE  
09:13AM 2 EDISON ACTUALLY DID 12 TESTS IN THE THERANOS CLIA LAB?  
09:13AM 3 A. YES, THE EDISON DID 12 TESTS IN THE CLIA LAB.  
09:13AM 4 Q. AND NOT ALL OF THOSE WERE ONLINE IN THE CLINICAL LAB WHILE  
09:13AM 5 YOU WERE THERE; CORRECT?  
09:13AM 6 A. REPEAT THAT QUESTION ONE MORE TIME.  
09:13AM 7 Q. WERE ALL 12 TESTS RUN ON EDISON, ALL WORKING IN THE CLIA  
09:13AM 8 LAB OR OPERATIONAL IN THE CLIA LAB WHILE YOU WERE THERE?  
09:14AM 9 A. NO.  
09:14AM 10 Q. OKAY.  
09:14AM 11 A. THEY WERE TECHNICALLY SET TO BE PERFORMED IN THE CLIA LAB,  
09:14AM 12 BUT WE DIDN'T NECESSARILY HAVE THEM ALL ON BOARDED TO ACTUALLY  
09:14AM 13 ACTIVELY RUN IN THE CLINICAL LAB.  
09:14AM 14 Q. OKAY. BECAUSE THEY WERE BROUGHT BASICALLY ONE BY ONE AS  
09:14AM 15 THE VALIDATION REPORT AND THOSE STUDIES WERE DONE?  
09:14AM 16 A. SOMETIMES.  
09:14AM 17 Q. OKAY. BUT YOU DON'T KNOW ONE WAY OR THE OTHER WHETHER THE  
09:14AM 18 EDISON COULD DO MORE THAN 12 TESTS; RIGHT?  
09:14AM 19 A. THE EDISON -- I MEAN, YOU COULD ONBOARD MORE ASSAYS ONTO  
09:14AM 20 THE EDISON, BUT IN TERMS OF MY TIME WORKING THERE, THOSE -- WE  
09:14AM 21 ONLY HAD 12 TESTS THAT WERE RUNNING ON THE EDISON THAT HAD THE  
09:14AM 22 CAPACITY TO BE RUN ON THE EDISON.  
09:14AM 23 Q. OKAY. BUT THERE'S NO REASON WHY THE COMPANY COULDN'T HAVE  
09:14AM 24 TAKEN ANY OF THE OTHER IMMUNOASSAYS THAT I JUST REFERRED TO,  
09:14AM 25 ASSUMING THAT THOSE ARE IMMUNOASSAYS, AND ALSO ONBOARD THOSE

09:14AM 1

ONTO THE EDISON?

09:14AM 2

MR. BOSTIC: OBJECTION. FOUNDATION. CALLS FOR

09:14AM 3

SPECULATION.

09:14AM 4

THE COURT: SUSTAINED FOR SPECULATION.

09:15AM 5

BY MR. COOPERSMITH:

09:15AM 6

Q. WELL, DO YOU KNOW ONE WAY OR THE OTHER WHETHER THERANOS

09:15AM 7

COULD HAVE PUT MORE IMMUNOASSAYS ONTO THE EDISON IF IT HAD

09:15AM 8

DECIDED TO DO THE VALIDATION STUDIES? DO YOU KNOW ONE WAY OR

09:15AM 9

THE OTHER?

09:15AM 10

MR. BOSTIC: SAME OBJECTION.

09:15AM 11

THE COURT: WITHOUT A FOUNDATION I'LL SUSTAIN THE

09:15AM 12

OBJECTION.

09:15AM 13

MR. COOPERSMITH: I'M JUST ASKING HER UNDERSTANDING,

09:15AM 14

BUT I'LL ASK ANOTHER QUESTION.

09:15AM 15

Q. MS. CHEUNG, DO YOU HAVE AN UNDERSTANDING AS TO WHETHER THE

09:15AM 16

COMPANY COULD HAVE PUT MORE IMMUNOASSAYS ONTO THE EDISON IF IT

09:15AM 17

HAD SO CHOSE?

09:15AM 18

A. I'M SORRY, COULD YOU REPEAT THE QUESTION ONE MORE TIME.

09:15AM 19

Q. SURE.

09:15AM 20

DO YOU HAVE AN UNDERSTANDING WHETHER THE COMPANY COULD

09:15AM 21

HAVE PUT MORE IMMUNOASSAYS ONTO THE EDISON IF IT HAD SO CHOSE

09:15AM 22

TO DO SO?

09:15AM 23

A. THE COMPANY COULD HAVE PUT MORE ASSAYS ON THE EDISON.

09:15AM 24

Q. AND YOU DON'T KNOW THE REASON WHY THE COMPANY DID OR

09:15AM 25

DIDN'T DO THAT, DO YOU?

09:15AM 1 A. I MEAN, WE DIDN'T HAVE THE CAPACITY TO RUN SOME OF THEM,  
09:15AM 2 AND THERE WASN'T ACTIVE VALIDATION FOR A LOT OF THE ASSAYS THAT  
09:16AM 3 YOU LISTED. LIKE, IT WAS JUST NOT IN DEVELOPMENT.

09:16AM 4 Q. OKAY. WELL, LET ME ASK THE QUESTION A LITTLE BIT  
09:16AM 5 DIFFERENTLY.

09:16AM 6 YOU DON'T KNOW WHAT REASON DROVE THE COMPANY TO ADD THE  
09:16AM 7 CAPACITY TO PUT THESE OTHER IMMUNOASSAYS ONTO THE EDISON OR  
09:16AM 8 NOT?

09:16AM 9 A. I SEE. NO.

09:16AM 10 Q. RIGHT. SO THERE MIGHT HAVE BEEN BUSINESS REASONS, FOR  
09:16AM 11 EXAMPLE?

09:16AM 12 A. CORRECT.

09:16AM 13 Q. OKAY. NOW, IN TERMS OF THE COMPANY'S TECHNOLOGY, YOU WERE  
09:16AM 14 AWARE THAT THERE WAS ALSO A DEVICE IN THE RESEARCH AND  
09:16AM 15 DEVELOPMENT AREA KNOWN AS THE 4.0; CORRECT?

09:16AM 16 A. CORRECT.

09:16AM 17 Q. AND SOMETIMES PEOPLE REFER TO IT AS THE MINILAB?

09:16AM 18 A. CORRECT.

09:16AM 19 Q. AND THAT WAS THE DEVICE THAT COULD DO, IN ADDITION TO THE  
09:16AM 20 IMMUNOASSAYS IN THE RESEARCH AND DEVELOPMENT AREA, IT COULD DO  
09:16AM 21 OTHER TYPES OF BLOOD TESTS, OTHER CATEGORIES?

09:16AM 22 A. YES, THAT WAS THE GOAL.

09:16AM 23 Q. SUCH AS NUCLEIC ACID AMPLIFICATION TESTING?

09:16AM 24 A. CORRECT.

09:16AM 25 Q. AND SUCH AS CYTOMETRY?



09:16AM 1 A. CORRECT.

09:16AM 2 Q. AND SUCH AS GENERAL CHEMISTRY?

09:17AM 3 A. CORRECT.

09:17AM 4 Q. AND YOU'RE NOT DIRECTLY FAMILIAR WITH ALL OF THE RESEARCH

09:17AM 5 AND DEVELOPMENT WORK THAT WAS GOING INTO THE 4.0?

09:17AM 6 A. THAT IS CORRECT.

09:17AM 7 Q. AND DID THE COMPANY -- WERE YOU INVOLVED IN ANY WAY WITH

09:17AM 8 THE COMPANY'S SUBMISSIONS TO THE FOOD AND DRUG ADMINISTRATION

09:17AM 9 CONCERNING THE 4.0?

09:17AM 10 A. NO.

09:17AM 11 Q. OKAY. I WANT TO SHOW YOU A BUNCH OF BINDERS. AGAIN, I

09:17AM 12 APOLOGIZE. I'M GOING TO GIVE YOU EVEN MORE BINDERS, SO JUST

09:17AM 13 LET ME GET THEM.

09:17AM 14 MAY I APPROACH, YOUR HONOR?

09:17AM 15 THE COURT: YES.

09:17AM 16 MR. COOPERSMITH: (HANDING.)

09:18AM 17 MAY I APPROACH, YOUR HONOR?

09:18AM 18 THE COURT: YES.

09:18AM 19 BY MR. COOPERSMITH:

09:18AM 20 Q. MS. CHEUNG, WHAT I'VE HANDED YOU ARE FOUR VOLUMES OF

09:18AM 21 ASSAYS DEVELOPMENT REPORTS.

09:18AM 22 I THINK YOU TESTIFIED LAST WEEK THAT YOU WERE NOT ACTUALLY

09:18AM 23 INVOLVED IN DRAFTING OR WORKING ON THOSE REPORTS?

09:18AM 24 A. CORRECT.

09:18AM 25 Q. OKAY. BUT YOU UNDERSTAND THAT ASSAY DEVELOPMENT WORK WAS

09:19AM 1

GOING ON?

09:19AM 2

A. CORRECT.

09:19AM 3

Q. AND ALL OF THE ASSAY DEVELOPMENT WORK, YOU UNDERSTAND WAS

09:19AM 4

DESIGNED TO HAVE ASSAYS OR BASICALLY INVENT ASSAYS THAT COULD

09:19AM 5

WORK WITH SMALL BLOOD SAMPLES ON THERANOS'S DEVICES; RIGHT?

09:19AM 6

A. CORRECT.

09:19AM 7

Q. AND SO IF I ASKED YOU ABOUT ANY OF THOSE ASSAY DEVELOPMENT

09:19AM 8

REPORTS, YOU WOULD TELL ME YOU DIDN'T RECOGNIZE IT; RIGHT?

09:19AM 9

A. YES.

09:19AM 10

Q. OKAY. AND ARE YOU AWARE THAT THE COMPANY, WHILE IT WAS

09:19AM 11

DOING THIS RESEARCH AND DEVELOPMENT WORK ON SMALL BLOOD ASSAYS,

09:19AM 12

THAT WHILE YOU WERE THERE AT THERANOS IT COMPLETED OVER 161

09:19AM 13

ASSAY DEVELOPMENT REPORTS AT THERANOS? ARE YOU AWARE OF THAT?

09:19AM 14

A. I DIDN'T KNOW.

09:19AM 15

Q. ALL RIGHT. LET'S MOVE ON TO EXHIBIT 1430.

09:20AM 16

A. IN WHICH BINDER?

09:20AM 17

Q. AND THAT'S IN THE GOVERNMENT'S BINDER.

09:20AM 18

A. OKAY.

09:20AM 19

(PAUSE IN PROCEEDINGS.)

09:20AM 20

THE WITNESS: I DON'T HAVE THIS PAGE. I ONLY HAVE

09:20AM 21

1431.

09:20AM 22

MR. COOPERSMITH: ONE MOMENT, YOUR HONOR.

09:20AM 23

(PAUSE IN PROCEEDINGS.)

09:21AM 24

MR. COOPERSMITH: YOUR HONOR, MAY I APPROACH THE

09:21AM 25

WITNESS?

09:21AM 1 THE COURT: YES.

09:21AM 2 BY MR. COOPERSMITH:

09:21AM 3 Q. WE'LL COME BACK TO 1430, AND WE'LL FIND IT, BUT LET'S MOVE

09:21AM 4 ON TO ANOTHER EXHIBIT.

09:21AM 5 A. OKAY.

09:21AM 6 Q. SO EXHIBIT 1512?

09:22AM 7 A. ALL RIGHT. I HAVE IT UP.

09:22AM 8 Q. OKAY. I WAS HOPING YOU WOULD HAVE THAT ONE. THANK YOU.

09:22AM 9 SO 1512, THIS IS AN EXHIBIT THAT MR. BOSTIC SHOWED YOU ON

09:22AM 10 DIRECT.

09:22AM 11 DO YOU RECALL THAT?

09:22AM 12 A. YES.

09:22AM 13 Q. OKAY. AND IF YOU GO TO THE EXHIBIT, IT STARTS OUT, IF YOU

09:22AM 14 GO TO THE VERY EARLIEST EMAIL IN TIME, THERE'S AN EMAIL FROM

09:22AM 15 DR. ROSENDORFF TO A GROUP OF PEOPLE, INCLUDING YOURSELF.

09:22AM 16 DO YOU SEE THAT?

09:22AM 17 A. YES.

09:22AM 18 Q. AND IT SAYS, "CAN YOU FOLKS PLEASE START WORKING ON THESE

09:22AM 19 SO WE CAN IMPLEMENT THESE ASSAYS. MAYBE YOU CAN EACH TACKLE

09:22AM 20 ONE."

09:22AM 21 DO YOU SEE THAT?

09:22AM 22 A. YES.

09:22AM 23 Q. AND THEN THE NEXT PAGE SAYS, "PLEASE USE THE EXISTING

09:22AM 24 EDISON SOP'S AS TEMPLATES."

09:22AM 25 AND THEN THERE'S A LINK.

09:23AM 1 IS THAT LINK -- AM I RIGHT THAT THAT LINK IS A LINK TO A  
09:23AM 2 FOLDER THAT CONTAINS SOP'S?

09:23AM 3 A. CORRECT.

09:23AM 4 Q. AND THEN IF YOU GO TO THE EMAIL RIGHT ABOVE THE ONE THAT I  
09:23AM 5 JUST SHOWED YOU, THERE'S AN EMAIL FROM YOU TO THE SAME GROUP  
09:23AM 6 INCLUDING DR. ROSENDORFF.

09:23AM 7 DO YOU SEE THAT?

09:23AM 8 A. YES.

09:23AM 9 Q. AND IT SAYS, "WE'VE ALREADY BEEN WORKING ON TOTAL T4  
09:23AM 10 (AURELIE), TOTAL T3 (ROMINA), AND TOTAL TESTOSTERONE (ERIKA).  
09:23AM 11 WE ARE STILL WORKING ON GATHERING ALL OF THE REAGENTS FOR FSH.  
09:23AM 12 WE ARE ALSO WORKING ON GETTING THE REAGENTS FOR HCV (JAMIE) AT  
09:23AM 13 THE MOMENT AS WELL."

09:23AM 14 HCV, REFERRING TO THAT FOR A MOMENT, IS THAT HEPATITIS C?

09:23AM 15 A. THAT IS CORRECT.

09:23AM 16 Q. IF YOU GO TO THE FIRST PAGE OF THE EXHIBIT, THE VERY  
09:24AM 17 BOTTOM EMAIL IN THE FIRST PAGE IT'S FROM DR. SAKSENA.

09:24AM 18 DO YOU SEE THAT?

09:24AM 19 A. YES.

09:24AM 20 Q. AND IT SAYS, "HI ADAM,

09:24AM 21 "THERE WAS A CONCERN EXPRESSED TO ME REGARDING STABILITY  
09:24AM 22 SINCE WE DO NOT HAVE STABILITY DATA ON THE HCV CAPSYS  
09:24AM 23 CARTRIDGES AND THEY WERE MADE ON 12/21/2013 (A LITTLE OVER A  
09:24AM 24 MONTH ALGORITHM)." HE GOES ON AND MAKES A SUGGESTION.

09:24AM 25 AND HE SAYS, "IF THIS QC FAILS, WE WILL NOT RUN THE

09:24AM 1 PATIENT SAMPLE. WE WILL HAVE TO RECALIBRATE WITH FRESH  
09:24AM 2 REAGENTS."

09:24AM 3 DO YOU UNDERSTAND THAT DR. SAKSENA WAS TELLING YOU THAT  
09:24AM 4 UNTIL THEY FIGURED THIS OUT, THEY WERE NOT GOING TO RUN THE  
09:25AM 5 PATIENT SAMPLE?

09:25AM 6 A. CORRECT.

09:25AM 7 Q. OKAY. AND IF YOU GO TO THE EMAIL ABOVE THAT. THIS IS THE  
09:25AM 8 ONE WHERE YOU INADVERTENTLY WROTE ON MS. RIENER'S COMPUTER;  
09:25AM 9 CORRECT?

09:25AM 10 A. CORRECT.

09:25AM 11 Q. AND YOU WROTE, "HI ALL,

09:25AM 12 "I'LL RUN THE QC RUNS FOR THE ASSAYS, BUT I DON'T FEEL  
09:25AM 13 COMFORTABLE RUNNING THE PATIENT SAMPLE. YOU'RE GOING TO HAVE  
09:25AM 14 TO FIND SOMEONE ELSE TO DO IT. I'LL INFORM JAMIE."

09:25AM 15 DO YOU SEE THAT?

09:25AM 16 A. YES.

09:25AM 17 Q. AND DR. SAKSENA ALREADY TOLD YOU THAT HE WASN'T RUNNING  
09:25AM 18 THE PATIENT SAMPLE JUST A FEW MINUTES BEFORE THAT; RIGHT?

09:25AM 19 A. CORRECT.

09:25AM 20 Q. AND THEN IF YOU GO TO THE NEXT EMAIL, DR. ROSENDORFF  
09:25AM 21 INSTRUCTS ROMINA OR JAMIE, "PLEASE RUN THE CONTROLS AND LET ME  
09:25AM 22 KNOW THE RESULTS ASAP"; CORRECT?

09:25AM 23 A. CORRECT.

09:25AM 24 Q. AND SO DR. ROSENDORFF IS JUST SAYING RUN THE CONTROLS AND  
09:25AM 25 NOT THE SAMPLE; RIGHT?

09:25AM 1 A. CORRECT.

09:25AM 2 Q. AND THEN AT THE TOP DR. ROSENDORFF SENT AN EMAIL TO JUST

09:25AM 3 YOU AND SAYS THAT HE, DR. ROSENDORFF, TALKED TO MARK AND SURAJ.

09:26AM 4 SURAJ IS DR. SAKSENA?

09:26AM 5 A. WAIT, WAIT. I'M WRITING THIS EMAIL.

09:26AM 6 Q. YEAH, I'M SORRY. THANK YOU.

09:26AM 7 YOU WROTE AN EMAIL TO DR. ROSENDORFF THAT YOU HAD HAD A

09:26AM 8 CONVERSATION WITH MARK AND SURAJ? SORRY ABOUT THAT.

09:26AM 9 A. UH-HUH.

09:26AM 10 Q. AND MARK IS MARK PANDORI?

09:26AM 11 A. CORRECT.

09:26AM 12 Q. DR. PANDORI?

09:26AM 13 A. CORRECT.

09:26AM 14 Q. AND SURAJ IS DR. SAKSENA?

09:26AM 15 A. CORRECT.

09:26AM 16 Q. AND YOU WROTE, "THEY ARE JUST GOING TO RUN THE TEST ON THE

09:26AM 17 FDA APPROVED WAIVED TEST AND REPORT THE RESULTS FROM THERE."

09:26AM 18 A. YEAH.

09:26AM 19 Q. "THEY TOLD ME THERE WAS NO NEED TO RUN THE QC'S, I CAN

09:26AM 20 STILL RUN THEM IF YOU NEED THE DATA."

09:26AM 21 DO YOU SEE THAT?

09:26AM 22 A. YEAH.

09:26AM 23 Q. AND SINCE THE SAMPLE WAS GOING TO BE RUN ON FDA COMMERCIAL

09:26AM 24 MACHINES, THERE WAS NO NEED AT THAT POINT TO RUN THE QC ON THE

09:26AM 25 EDISON DEVICE; IS THAT CORRECT?

09:26AM 1 A. CORRECT.

09:26AM 2 Q. AND SO WHAT HAPPENED HERE IS THAT THERE WAS A CONCERN

09:27AM 3 RAISED AND THE COMPANY DID NOT GO FORWARD WITH RUNNING A SAMPLE

09:27AM 4 WHEN IT WASN'T SURE ABOUT THE DEVICE; IS THAT CORRECT?

09:27AM 5 A. CORRECT.

09:27AM 6 Q. OKAY. NOW, THERANOS ACTUALLY NEVER RAN HEPATITIS C, OR

09:27AM 7 HCV, ON THE EDISON DEVICE?

09:27AM 8 A. NOT AFTER THIS INCIDENT, NO.

09:27AM 9 Q. IT NEVER RAN IT AGAIN AFTER THAT INCIDENT?

09:27AM 10 A. NOT WHILE I WORKED FOR THE COMPANY.

09:27AM 11 Q. OKAY. AND THAT'S ALL YOU COULD KNOW ABOUT; RIGHT?

09:27AM 12 A. EXACTLY.

09:27AM 13 Q. OKAY. IF WE CAN GO TO EXHIBIT 1587, SAME BINDER, I THINK.

09:27AM 14 THIS IS ANOTHER EXHIBIT THAT YOU SAW DURING YOUR DIRECT

09:27AM 15 EXAMINATION?

09:27AM 16 A. CORRECT.

09:27AM 17 Q. AND IF YOU GO TO THE BOTTOM EMAIL, JUST TO ORIENT

09:28AM 18 OURSELVES HERE, THIS IS THE EMAIL FROM ALPHONSO NGUYEN ABOUT

09:28AM 19 WHAT HE SAID WERE THE BAD 3.0 READERS WITH CERTAIN NUMBERS.

09:28AM 20 DO YOU SEE THAT?

09:28AM 21 A. YES.

09:28AM 22 Q. AND THEN IF YOU GO TO THE VERY BOTTOM OF PAGE 1, THERE'S

09:28AM 23 AN EMAIL FROM DR. SIVARAMAN.

09:28AM 24 DO YOU SEE THAT?

09:28AM 25 AND IT SAYS, "HI, ALPHONSO AND SAM."

09:28AM 1 DO YOU SEE THAT? THE BOTTOM OF THE FIRST PAGE?

09:28AM 2 A. YES.

09:28AM 3 Q. AND THEN IF YOU GO TO THE NEXT PAGE WHERE THE SUBSTANCE OF  
09:28AM 4 THE EMAIL CONTINUES IT SAYS, "I WANTED TO FIND OUT MORE ABOUT  
09:28AM 5 THE 3.5 READERS MENTIONED IN THIS EMAIL. IF THERE ARE READERS  
09:28AM 6 THAT FAIL YOUR BIWEEKLY QC, WE NEED TO KNOW VIA EMAIL TO THE  
09:28AM 7 ENTIRE TEAM THAT THOSE READERS NEED TO BE AVOIDED."

09:28AM 8 AND SO DID YOU UNDERSTAND THAT THE POINT OF THIS WAS TO  
09:29AM 9 MAKE SURE THAT IF THERE WAS SOME ISSUE IDENTIFIED WITH AN  
09:29AM 10 EDISON DEVICE, THAT THEY WOULDN'T BE USED IN THE LAB; IS THAT  
09:29AM 11 RIGHT?

09:29AM 12 A. CORRECT.

09:29AM 13 Q. OKAY. AND THEN IF YOU GO ABOVE THAT ON THE FIRST PAGE  
09:29AM 14 THERE'S AN EMAIL FROM SAMARTHA ANEKAL TO DR. SIVARAMAN,  
09:29AM 15 ALPHONSO NGUYEN, AND COPIED TO RAN HU, H-U?

09:29AM 16 A. YES.

09:29AM 17 Q. BY THE WAY, WHO WAS RAN HU?

09:29AM 18 A. RAN HU WAS ONE OF THE TEAM LEADS FOR THE ELISA TEAM.

09:29AM 19 Q. OKAY. SO THAT WAS ON THE GROUP IN THE R&D DEPARTMENT THAT  
09:29AM 20 YOU WERE INVOLVED WITH?

09:29AM 21 A. CORRECT.

09:29AM 22 Q. OKAY. AND MR. ANEKAL -- AND WHO IS HE BY THE WAY, I  
09:29AM 23 SHOULD ASK?

09:29AM 24 A. SAMARTHA ANEKAL WAS THE HEAD OF -- LIKE THE ENGINEERING  
09:29AM 25 TEAM, THE HARDWARE ENGINEERING TEAM. IT WAS SOMETIMES LIKE



09:29AM 1 SYSTEMS INTEGRATION SOMETHING. I DON'T REMEMBER THE ACRONYM.

09:29AM 2 Q. OKAY. BUT THAT'S MORE ON THE MANUFACTURING SIDE IT SOUNDS

09:30AM 3 LIKE?

09:30AM 4 A. IT'S A BIT OF A MIX OF THE RESEARCH AND DEVELOPMENT SIDE

09:30AM 5 AND THE MANUFACTURING SIDE. SO THEY ARE WORKING SPECIFICALLY

09:30AM 6 WITH THE HARDWARE OF THE DIFFERENT ASSAYS THAT WE HAVE.

09:30AM 7 Q. OKAY. AND THE HARDWARE WOULD MEAN LIKE THE PHYSICAL

09:30AM 8 EDISON DEVICE, FOR EXAMPLE?

09:30AM 9 A. THE PHYSICAL EDISON DEVICE AND ALSO THE PHYSICAL DEVICE OF

09:30AM 10 THE 4.0'S AS WELL.

09:30AM 11 Q. OKAY. AND, FOR EXAMPLES, THE CARTRIDGES MIGHT BE PART OF

09:30AM 12 THE MANUFACTURING PROCESS?

09:30AM 13 A. IT MIGHT BE, BUT I'M NOT SURE.

09:30AM 14 Q. BUT THAT WAS MORE DR. SAKSENA'S DEPARTMENT AT THE TIME?

09:30AM 15 A. IT WAS LIKE A PRODUCTION, BUT IT WAS LIKE A SEPARATE

09:30AM 16 DEPARTMENT.

09:30AM 17 Q. OKAY. AND I DON'T KNOW WHETHER YOU EVER SAW THESE

09:30AM 18 FACILITIES, BUT EDISON -- THERANOS RATHER HAD THESE

09:30AM 19 MANUFACTURING FACILITIES TO MANUFACTURE THESE THINGS; IS THAT

09:30AM 20 RIGHT?

09:30AM 21 A. YES.

09:30AM 22 Q. AND YOU DIDN'T WORK IN THOSE AREAS, BUT YOU'RE AWARE AND

09:30AM 23 PRESUMABLY YOU SAW THOSE AT SOME POINT?

09:30AM 24 A. CORRECT.

09:30AM 25 Q. OKAY. GOING BACK TO THAT EMAIL THAT WE WERE JUST LOOKING

09:30AM 1 AT.

09:30AM 2 MR. ANEKAL WRITES, "SHARADA, MOST OF THE TIME, A BAD RUN  
09:31AM 3 REQUIRES SUBSEQUENT ACTIONS, WHICH CAN TAKE TIME. THIS DOESN'T  
09:31AM 4 MEAN THAT A DEVICE IS PERMANENTLY BAD, BUT WE HAVEN'T CONFIRMED  
09:31AM 5 THAT IT'S A NON-DEVICE ISSUE."

09:31AM 6 DO YOU SEE THAT?

09:31AM 7 A. YES.

09:31AM 8 Q. AND SO YOU UNDERSTAND THAT THE CONCEPT HERE IS THAT THERE  
09:31AM 9 WOULD HAVE TO BE SOME TYPE OF INVESTIGATION TO DETERMINE WHAT  
09:31AM 10 THE PROBLEM WAS BEFORE THEY COULD ALLOW A DEVICE TO GO BACK  
09:31AM 11 INTO USE; IS THAT RIGHT?

09:31AM 12 A. CORRECT.

09:31AM 13 Q. AND PEOPLE LIKE MR. ANEKAL AND OTHERS WOULD BE DOING THAT  
09:31AM 14 WORK?

09:31AM 15 A. FOR THE DEVICES.

09:31AM 16 Q. OKAY. GO TO THE EMAIL ABOVE THAT. MR. NGUYEN,  
09:31AM 17 ALPHONSO NGUYEN, HE SAYS, "THE OUTLIERS LIST CAN BE FOUND IN  
09:31AM 18 THE FOLLOWING LINK," AND THERE'S THAT S DRIVE LINK?

09:31AM 19 A. YES.

09:31AM 20 Q. AND THAT'S A SHARED DRIVE THAT EVERYONE INVOLVED IN THIS  
09:31AM 21 HAS ACCESS TO?

09:31AM 22 A. YES.

09:31AM 23 Q. AND THEN THE EMAIL ABOVE THAT FROM DR. SIVARAMAN TO A  
09:31AM 24 GROUP OF PEOPLE, INCLUDING YOURSELF, THAT SAYS FYI, AND THAT'S  
09:32AM 25 SO YOU KNEW WHERE TO FIND THE INFORMATION IF YOU NEEDED IT;

09:32AM 1

RIGHT?

09:32AM 2

A. CORRECT.

09:32AM 3

Q. AND ALL OF THESE PEOPLE ON THE EMAIL, INCLUDING THE LARGER

09:32AM 4

GROUP ON THE TOP THAT WE'RE LOOKING AT NOW AND THEN THE OTHER

09:32AM 5

PEOPLE THAT WE SPECIFICALLY DISCUSSED, THEY WERE ALL JUST

09:32AM 6

TRYING TO DO THEIR JOBS AS BEST AS THEY COULD AS FAR AS YOU

09:32AM 7

KNEW?

09:32AM 8

A. CORRECT.

09:32AM 9

MR. BOSTIC: OBJECTION. FOUNDATION. SPECULATION.

09:32AM 10

THE COURT: I'LL ALLOW IT. YOU CAN ASK ANOTHER

09:32AM 11

QUESTION.

09:32AM 12

MR. COOPERSMITH: OKAY.

09:32AM 13

Q. LET'S GO TO EXHIBIT 1633, SAME BINDER.

09:32AM 14

THIS IS ANOTHER EXHIBIT THAT YOU SAW DURING YOUR DIRECT

09:32AM 15

EXAMINATION?

09:32AM 16

A. THAT IS CORRECT.

09:32AM 17

Q. AND IF YOU GO TO THE BOTTOM, THIS IS WHERE YOU IDENTIFIED

09:33AM 18

SOME QC, QUALITY CONTROL, FOR SOME ASSAYS THAT HAD FAILED QC;

09:33AM 19

IS THAT CORRECT?

09:33AM 20

A. CORRECT, THIS IS THE CULMINATION OF THE MONTH.

09:33AM 21

Q. FOR MARCH?

09:33AM 22

A. YES.

09:33AM 23

Q. OF 2014?

09:33AM 24

A. YES.

09:33AM 25

Q. AND YOU CALCULATED OR YOU REPORTED AN OVERALL PERCENTAGE

09:33AM 1 OF 26 PERCENT ON THE BOTTOM; IS THAT RIGHT?

09:33AM 2 A. LANGLEY DID, YES.

09:33AM 3 Q. LANGLEY GEE DID?

09:33AM 4 A. YES.

09:33AM 5 Q. AND HE WAS THE DIRECTOR OF QUALITY CONTROL?

09:33AM 6 A. THAT IS CORRECT.

09:33AM 7 Q. IF YOU GO TO THE TOP, THE EMAIL RIGHT ABOVE THAT,

09:33AM 8 DR. PANDORI SAYS, "LANGLEY, EXACTLY WHAT I WANTED. THANK YOU."

09:33AM 9 RIGHT?

09:33AM 10 A. CORRECT.

09:33AM 11 Q. SO THE COMPANY WAS MONITORING THIS PROCESS?

09:33AM 12 A. WHEN LANGLEY GOT HIRED, YES.

09:33AM 13 Q. AND LANGLEY GOT HIRED IN 2013?

09:33AM 14 A. IN DECEMBER, I BELIEVE.

09:34AM 15 Q. OKAY. AT THE END OF 2013?

09:34AM 16 A. YES.

09:34AM 17 Q. AND MR. GEE, LANGLEY GEE, WAS BROUGHT ON AS A QUALITY

09:34AM 18 CONTROL MANAGER TO DO JUST EXACTLY THIS SORT OF WORK AS FAR AS

09:34AM 19 YOU UNDERSTOOD; RIGHT?

09:34AM 20 A. CORRECT.

09:34AM 21 Q. OKAY. SO IF I WANTED TO KNOW THE QUALITY CONTROL

09:34AM 22 INFORMATION IN MORE DETAIL FOR MARCH OR ANY OTHER MONTH FOR

09:34AM 23 THAT MATTER, I WOULD HAVE TO GO TO A SYSTEM CALLED LABORATORY

09:34AM 24 INFORMATION SYSTEM; IS THAT CORRECT?

09:34AM 25 A. CORRECT.

09:34AM 1 Q. AND THAT'S WHERE ALL OF THE QUALITY CONTROL DATA WOULD BE  
09:34AM 2 HOUSED?

09:34AM 3 A. CORRECT.

09:34AM 4 Q. AND, IN FACT, ALL OF THE PATIENT RECORDS AND PATIENT  
09:34AM 5 INFORMATION WOULD ALSO BE HOUSED IN THAT LABORATORY INFORMATION  
09:34AM 6 SYSTEM?

09:34AM 7 A. YES. SOMETIMES WE HAD IT IN SPREADSHEETS AS WELL.

09:34AM 8 Q. BUT ALSO IN THE LIS?

09:34AM 9 A. FOR SOME OF IT, YES.

09:34AM 10 Q. AND YOU UNDERSTAND SOMETIMES PEOPLE WOULD REFER TO IT, THE  
09:34AM 11 LABORATORY INFORMATION SYSTEM, AS THE LIS?

09:35AM 12 A. CORRECT.

09:35AM 13 Q. OKAY. AND ALSO INFORMATION ABOUT PATIENT RESULTS, ALL OF  
09:35AM 14 THE PATIENT RESULTS, THAT WOULD ALSO BE IN THE LIS?

09:35AM 15 A. THE PATIENT RESULTS WOULD, YES.

09:35AM 16 Q. AND IF YOU WANTED TO KNOW WHICH TECHNICIANS RAN PARTICULAR  
09:35AM 17 PATIENT SAMPLES, THAT WOULD ALSO BE NOTED IN THE LIS?

09:35AM 18 A. IDEALLY, BUT I DON'T KNOW IF IT WAS ALWAYS.

09:35AM 19 Q. WELL, IN FACT, YOU SAW INSTANCES WHERE THAT WAS THE CASE;  
09:35AM 20 RIGHT?

09:35AM 21 A. YES.

09:35AM 22 Q. AND THEN WOULD YOU AGREE WITH ME THAT THE LIS WAS A  
09:35AM 23 COMPREHENSIVE DATABASE UTILIZED TO REPORT THE RESULTS OF  
09:35AM 24 CLINICAL DIAGNOSTIC TESTS?

09:35AM 25 A. COULD YOU REPEAT THAT AGAIN.

09:35AM 1 Q. WOULD YOU AGREE WITH ME THAT THE LIS WAS A COMPREHENSIVE  
09:35AM 2 DATABASE THAT WAS USED BY THERANOS TO REPORT CLINICAL  
09:35AM 3 DIAGNOSTIC RESULTS?

09:35AM 4 A. YES.

09:36AM 5 Q. IN THE COURSE OF YOUR PREPARATION FOR TRIAL, YOU MET WITH  
09:36AM 6 THE GOVERNMENT A NUMBER OF TIMES; IS THAT RIGHT?

09:36AM 7 A. FOR THE BALWANI TRIAL?

09:36AM 8 Q. FOR ANY PROCEEDING INVOLVING THERANOS, YOU'VE MET WITH THE  
09:36AM 9 GOVERNMENT MANY TIMES; IS THAT RIGHT?

09:36AM 10 A. YES.

09:36AM 11 Q. AND YOU'VE TESTIFIED BEFORE IN OTHER PROCEEDINGS?

09:36AM 12 A. I'VE TESTIFIED IN THE HOLMES TRIAL.

09:36AM 13 Q. AND IN OTHER PROCEEDINGS AS WELL; IS THAT CORRECT?

09:36AM 14 A. IN DEPOSITIONS FOR EXTERNAL CASES NOT RELATED TO THIS  
09:36AM 15 CASE.

09:36AM 16 Q. OKAY. AND IN ALL OF THE TIME THAT YOU HAVE BEEN INVOLVED  
09:36AM 17 WITH TESTIFYING ABOUT THERANOS, THE GOVERNMENT NEVER SHOWED YOU  
09:36AM 18 ANY DATA POINT WHERE THEY SHOWED YOU THE LIS SYSTEM ON A  
09:36AM 19 COMPUTER OR SOMETHING AND ASKED YOU TO LOOK AT SOMETHING; IS  
09:36AM 20 THAT RIGHT?

09:36AM 21 A. THAT IS CORRECT.

09:36AM 22 Q. LET'S GO TO EXHIBIT 1431. IF I REMEMBER, THAT'S THE ONE  
09:37AM 23 YOU DID HAVE IN YOUR BINDER.

09:37AM 24 OKAY. THIS IS ANOTHER EXHIBIT THAT YOU SAW DURING DIRECT  
09:37AM 25 EXAMINATION LAST WEEK.

09:37AM 1 DO YOU REMEMBER THAT?

09:37AM 2 A. YES.

09:37AM 3 Q. AND IF YOU GO TO -- JUST TO ORIENT OURSELVES AGAIN, IF YOU  
09:37AM 4 GO TO THE PAGE 3, THE BOTTOM EMAIL.

09:37AM 5 AND THIS IS WHERE DR. SIVARAMAN WRITES, "THE CV'S,"  
09:37AM 6 MEANING COEFFICIENT OF VARIATION; RIGHT?

09:38AM 7 A. UH-HUH.

09:38AM 8 Q. "ARE HIGH BETWEEN DEVICES, IF YOU SEE FOR THE DATA IN THE  
09:38AM 9 DAILY QC AND WITHIN CARTRIDGE CV'S ARE REALLY TIGHT."

09:38AM 10 AND THEN DR. SIVARAMAN GOES ON TO SAY, "SINCE WE ARE  
09:38AM 11 ALLOWED TO REMOVE 2 DATA POINTS FROM ONE (1 CARTRIDGE OUT OF 3)  
09:38AM 12 I HAVE ATTEMPTED TO DO THAT WITH BOTH THE LEVEL 1 AND LEVEL 2  
09:38AM 13 DATA AND IT IMPROVES THINGS. SEE ATTACHED FILE."

09:38AM 14 DO YOU SEE THAT?

09:38AM 15 A. YES.

09:38AM 16 Q. OKAY. AND LET ME PAUSE THERE FOR A MINUTE. YOU KNOW WHAT  
09:38AM 17 LEVEL 1 AND LEVEL 2 ARE; RIGHT?

09:38AM 18 A. YES.

09:38AM 19 Q. WITH RESPECT TO QUALITY CONTROL?

09:38AM 20 A. YES.

09:38AM 21 Q. AND SO IS IT FAIR TO SAY THAT WHEN RUNNING A QUALITY  
09:38AM 22 CONTROL TEST UNDER AN EDISON DEVICE, OR OTHER DEVICES, YOU  
09:38AM 23 WOULD HAVE TO DO TWO DIFFERENT LEVELS OF QUALITY CONTROL?

09:38AM 24 A. YES. YOU WOULD HAVE TO DO, SAY, LIKE A HIGH VALUE AND A  
09:38AM 25 LOW VALUE.

09:38AM 1 Q. OKAY. AND IN ORDER FOR THE DEVICE TO BE CLEARED TO PASS  
09:38AM 2 THE QUALITY CONTROL TEST, IT WOULD HAVE TO PASS ON BOTH OF THE  
09:38AM 3 LEVELS?  
09:38AM 4 A. THAT IS CORRECT.  
09:39AM 5 Q. AND IF IT FAILED ONE, IT COULD NOT BE USED FOR PATIENT  
09:39AM 6 TESTING, THAT WAS THE PROCEDURE?  
09:39AM 7 A. CORRECT.  
09:39AM 8 Q. AND SO IT'S NOT JUST KIND OF ONE AND DONE; RIGHT?  
09:39AM 9 A. CORRECT.  
09:39AM 10 Q. OKAY. SO LET'S TALK ABOUT THIS ISSUE OF THE DATA POINTS.  
09:39AM 11 SO YOU SEE DR. SIVARAMAN IS TALKING ABOUT BEING ALLOWED TO  
09:39AM 12 REMOVE TWO DATA POINTS?  
09:39AM 13 A. YES.  
09:39AM 14 Q. AND IF YOU GO TO THE EMAIL RIGHT ABOVE IT, THERE'S AN  
09:39AM 15 EMAIL FROM DR. ROSENDORFF TO DR. SIVARAMAN AND YOURSELF.  
09:39AM 16 DO YOU SEE THAT?  
09:39AM 17 A. YES.  
09:39AM 18 Q. AND THAT'S DATED JANUARY 16TH, 2014?  
09:39AM 19 A. YES.  
09:39AM 20 Q. AND THEN DR. ROSENDORFF WRITES, "SHARADA,  
09:39AM 21 "SINCE 3 DEVICES ARE BEING USED AS ONE TESTING SYSTEM, FOR  
09:39AM 22 THE PURPOSES OF QC WE MUST CONSIDER THEM AS ONE TESTING  
09:39AM 23 SYSTEM/DEVICE. THEREFORE THE WITHIN CARTRIDGE CV IS NOT  
09:39AM 24 RELEVANT. AS YOU ARE AWARE, WE ARE CALCULATING THE MEAN OF 6  
09:39AM 25 MEASUREMENT (OR MINIMUM 4) TO COME UP WITH THE ASSAYS VALUE."



09:40AM 1 DO YOU SEE THAT?

09:40AM 2 A. YES.

09:40AM 3 Q. AND SO WHEN DR. ROSENDORFF WAS REFERRING TO THE MINIMUM 4,  
09:40AM 4 YOU UNDERSTAND HE WAS TALKING ABOUT THAT SAME ISSUE OF REMOVING  
09:40AM 5 OUTLIERS, 2 DATA POINTS; CORRECT?

09:40AM 6 A. I'M NOT SURE. I DON'T REMEMBER.

09:40AM 7 Q. YEAH. WELL, JUST LOGICALLY, IF THERE ARE 6 DATA POINTS IN  
09:40AM 8 TOTAL?

09:40AM 9 A. YEAH.

09:40AM 10 Q. THAT'S THE NUMBER OF DATA POINTS THAT THE EDISON SYSTEM --  
09:40AM 11 I'LL REPEAT THE QUESTION.

09:40AM 12 SIX WAS THE NUMBER THAT THE EDISON DEVICE WOULD YIELD IN  
09:40AM 13 TERMS OF DATA POINTS; CORRECT?

09:40AM 14 A. CORRECT.

09:40AM 15 Q. AND IF YOU TOOK 2 AWAY, YOU WOULD END UP WITH 4?

09:40AM 16 A. CORRECT.

09:40AM 17 Q. BUT YOU DON'T KNOW EXACTLY WHAT DR. ROSENDORFF WAS  
09:40AM 18 REFERRING TO.

09:40AM 19 IS THAT YOUR TESTIMONY?

09:40AM 20 A. YES.

09:40AM 21 Q. AND THEN IF YOU GO TO PAGE -- LET'S JUST GO TO PAGE 1 FOR  
09:41AM 22 A MOMENT.

09:41AM 23 AND THEN THERE'S AN EMAIL FROM DR. SIVARAMAN AGAIN TO  
09:41AM 24 DR. ROSENDORFF AND YOURSELF AT 11:52 A.M.

09:41AM 25 DO YOU SEE THAT?

09:41AM 1 A. WHAT PAGE IS THAT?

09:41AM 2 Q. ON PAGE 1.

09:41AM 3 A. PAGE 1. YES.

09:41AM 4 Q. AND THAT'S JUST TO ORIENT YOU. BUT I WANT TO GO TO THE

09:41AM 5 REST OF THAT EMAIL, WHICH IS ON PAGE 2.

09:41AM 6 AND THEN YOU SEE RIGHT AFTER THE TABLE WITH SOME DATA

09:41AM 7 THERE'S A LINE THAT SAYS, AND THIS IS DR. SIVARAMAN WRITING, "I

09:41AM 8 BELIEVE AN ALGORITHM FOR OUTLIER REMOVAL HAS BEEN INCORPORATED

09:41AM 9 IN THE SOFT APP PROCESS WHEN EVALUATING CLINICAL SAMPLES IN

09:41AM 10 NORMANDY."

09:41AM 11 DO YOU SEE THAT?

09:41AM 12 A. YES.

09:41AM 13 Q. AND NORMANDY REFERS TO, I THINK YOU SAID LAST WEEK, IT'S

09:41AM 14 THE PART OF THE LAB THAT HAS THE THERANOS LABORATORY DEVELOPED

09:41AM 15 TESTS?

09:41AM 16 A. YES.

09:41AM 17 Q. SUCH AS THE EDISON?

09:41AM 18 A. YES.

09:41AM 19 Q. AND YOU DIDN'T DO ANY WORK ON THAT ALGORITHM THAT

09:41AM 20 DR. SIVARAMAN IS TALKING ABOUT, DID YOU?

09:42AM 21 A. NO.

09:42AM 22 Q. OKAY. AND IF YOU GO TO THE SAME EMAIL BUT ON THE FIRST

09:42AM 23 PAGE OF THE EXHIBIT, SO THE BEGINNING OF THAT SAME EMAIL. YOU

09:42AM 24 SEE IN THE FIRST PARAGRAPH DR. SIVARAMAN WRITES, "YES, I DO

09:42AM 25 AGREE WITH YOU THAT INTRA CV'S ARE NOT RELEVANT. I WAS

09:42AM 1 HIGHLIGHTING TO YOU THAT WHEN EVALUATED INDEPENDENTLY, EACH  
09:42AM 2 CARTRIDGE HAS TIGHT CV'S IN BOTH CONC AND RLU REGIMES, WHICH  
09:42AM 3 INDICATES THAT THE ASSAY ITSELF DOES NOT HAVE IMPRECISION."

09:42AM 4 DO YOU SEE THAT?

09:42AM 5 A. YES.

09:42AM 6 Q. AND YOU'RE NOT IN A POSITION TO DISAGREE WITH  
09:42AM 7 DR. SIVARAMAN ON THAT PARTICULAR POINT, THAT THE ASSAY ITSELF  
09:42AM 8 DOES NOT HAVE IMPRECISION, ARE YOU?

09:42AM 9 A. NO.

09:42AM 10 Q. AND IF YOU GO DOWN TO THE NEXT PARAGRAPH IT SAYS, "AT THIS  
09:42AM 11 TIME OUR OUTLIER REMOVAL PROCEDURE IS MANUAL (WE CAN REMOVE 2  
09:42AM 12 OUT OF THE 6 DATA POINTS) AND IT ALSO DEPENDS ON THE DATA SET."

09:43AM 13 DO YOU SEE THAT?

09:43AM 14 A. YES.

09:43AM 15 Q. AND THAT'S -- YOU MAY HAVE TALKED ABOUT THAT LAST WEEK,  
09:43AM 16 BUT THAT'S DR. SIVARAMAN EXPLAINING THAT AT THAT POINT IN TIME  
09:43AM 17 THERE'S A MANUAL PROCEDURE TO REMOVE 2 OUT OF 6 DATA POINTS;  
09:43AM 18 RIGHT?

09:43AM 19 A. CORRECT.

09:43AM 20 Q. AND YOU WERE CRITICAL OF THAT PROCESS WHEN YOU TESTIFIED  
09:43AM 21 LAST WEEK?

09:43AM 22 A. CORRECT.

09:43AM 23 Q. BUT YOU UNDERSTAND THAT THAT'S WHAT DR. SIVARAMAN IS  
09:43AM 24 SAYING IS APPROPRIATE IN THIS EMAIL?

09:43AM 25 A. YES.

09:43AM 1 Q. AND DR. ROSENDORFF IS ON THAT EMAIL?

09:43AM 2 A. YES.

09:43AM 3 Q. AND MR. BALWANI IS NOT ON THIS EMAIL; CORRECT?

09:43AM 4 A. CORRECT.

09:43AM 5 Q. I'D LIKE YOU TO TAKE A LOOK AT EXHIBIT 20451.

09:43AM 6 I MAY HAVE TO HAND THAT ONE UP.

09:44AM 7 MAY I APPROACH, YOUR HONOR?

09:44AM 8 THE COURT: YES.

09:44AM 9 MR. COOPERSMITH: (HANDING.)

09:44AM 10 Q. OKAY. DO YOU HAVE 20451 IN FRONT OF YOU?

09:44AM 11 A. YES.

09:44AM 12 Q. 20451 IS A 2013 PROFICIENCY TESTING MANUAL FROM THE

09:44AM 13 COLLEGE OF AMERICAN PATHOLOGISTS.

09:44AM 14 DO YOU SEE THAT?

09:44AM 15 A. YES.

09:44AM 16 Q. AND DO YOU UNDERSTAND THAT THIS IS NOT A THERANOS

09:44AM 17 DOCUMENT; CORRECT?

09:44AM 18 A. YES.

09:44AM 19 Q. DO YOU KNOW WHAT THE COLLEGE OF AMERICAN PATHOLOGISTS IS?

09:45AM 20 A. NO.

09:45AM 21 Q. I ASSUME YOU DIDN'T ATTEND THE COLLEGE OF AMERICAN

09:45AM 22 PATHOLOGISTS?

09:45AM 23 A. NO.

09:45AM 24 Q. AND DO YOU UNDERSTAND THAT THEY ARE ONE OF THE GROUPS THAT

09:45AM 25 SENDS PROFICIENCY SAMPLES FOR LABS TO TEST?

09:45AM 1 A. I CAN'T REMEMBER.

09:45AM 2 Q. SO, IN OTHER WORDS, LAST WEEK YOU TALKED ABOUT SOME  
09:45AM 3 SAMPLES THAT CAME FROM THE NEW YORK STATE LAB?

09:45AM 4 A. CORRECT.

09:45AM 5 Q. AND DO YOU UNDERSTAND THAT CAP IS ANOTHER GROUP THAT WOULD  
09:45AM 6 SEND SAMPLES THAT LABS COULD TEST TO DETERMINE THEIR  
09:45AM 7 PROFICIENCY?

09:45AM 8 A. YEAH, I DIDN'T KNOW THAT. BUT I IMAGINE SO.

09:45AM 9 Q. OKAY. IF YOU TURN TO PAGE 14 OF THE EXHIBIT. YOU SEE  
09:45AM 10 THERE'S A SECTION CALLED OUTLIER DETECTION TECHNIQUE?

09:45AM 11 A. YES.

09:45AM 12 Q. AND I'M ASSUMING YOU'RE NOT FAMILIAR WITH THE COUNCIL OF  
09:45AM 13 AMERICAN PATHOLOGISTS OUTLIER DETECTION TECHNIQUE THAT THEY  
09:46AM 14 RECOMMEND, ARE YOU?

09:46AM 15 A. NO.

09:46AM 16 Q. OKAY. I'D LIKE TO GO TO ANOTHER EXHIBIT, 1287.

09:46AM 17 EXHIBIT 1287 IS ANOTHER EXHIBIT YOU SAW ON DIRECT,  
09:46AM 18 MS. CHEUNG?

09:46AM 19 A. YES.

09:46AM 20 Q. AND IF WE LOOK AT THE TOP OF THE EMAIL, YOU SEE THERE'S AN  
09:46AM 21 EMAIL FROM DR. SAKSENA TO ELIZABETH HOLMES AND DANIEL YOUNG  
09:46AM 22 WITH A COPY TO THE OTHER PEOPLE LISTED THERE.

09:46AM 23 DO YOU SEE THAT?

09:46AM 24 A. CORRECT.

09:46AM 25 Q. AND YOU TESTIFIED LAST WEEK ON DIRECT THAT THESE WERE A

09:47AM 1 GROUP OF INDIVIDUALS THAT REGULARLY COMMUNICATED ABOUT ISSUES  
09:47AM 2 LIKE QUALITY CONTROL FAILURES?

09:47AM 3 A. YES.

09:47AM 4 Q. AND THEN YOU TESTIFIED THAT THE DOCUMENT INVOLVES A  
09:47AM 5 RESOLUTION OF A QC FAILURE ISSUE AT THERANOS?

09:47AM 6 A. YES. CORRECT.

09:47AM 7 Q. OKAY. I'D LIKE TO SHOW YOU EXHIBIT 1288 THAT SHOULD BE IN  
09:47AM 8 THE SAME BINDER. IF NOT, I CAN HAND IT UP.

09:47AM 9 A. I DON'T HAVE IT.

09:47AM 10 MR. COOPERSMITH: MAY I APPROACH, YOUR HONOR?

09:47AM 11 THE COURT: YES.

09:47AM 12 MR. COOPERSMITH: (HANDING.)

09:48AM 13 Q. OKAY. LOOKING AT EXHIBIT 1288, DO YOU SEE AT THE TOP  
09:48AM 14 THERE'S THE SAME GROUP OF INDIVIDUALS WHO ARE INVOLVED IN THE  
09:48AM 15 EMAIL STRING?

09:48AM 16 A. YES.

09:48AM 17 Q. OKAY. SAME GROUP AS IN EXHIBIT 1287?

09:48AM 18 A. YES.

09:48AM 19 Q. AND THEN YOU SEE IT INVOLVES THE SAME, THE SAME SUBJECT  
09:48AM 20 HEADING THAT THE OTHER EXHIBIT 1287 DOES?

09:48AM 21 A. YES.

09:48AM 22 Q. AND YOU SEE THAT IN THE BODY OF -- IF YOU JUST SORT OF  
09:49AM 23 FLIP THROUGH THE PAGES, MS. CHEUNG -- THAT SOME OF THE EMAILS  
09:49AM 24 IN EXHIBIT 1287 ARE ALSO IN 1288?

09:49AM 25 A. CORRECT.

09:49AM 1 Q. BUT THEN THERE ARE SOME ADDITIONAL EMAILS ON THE TOP OF  
09:49AM 2 EXHIBIT 1288?

09:49AM 3 A. CORRECT.

09:49AM 4 MR. COOPERSMITH: I OFFER 1288, YOUR HONOR.

09:49AM 5 MR. BOSTIC: NO OBJECTION.

09:49AM 6 THE COURT: IT'S ADMITTED. IT MAY BE PUBLISHED.

09:49AM 7 (DEFENDANT'S EXHIBIT 1288 WAS RECEIVED IN EVIDENCE.)

09:49AM 8 BY MR. COOPERSMITH:

09:49AM 9 Q. OKAY. I THINK WHEN THE GOVERNMENT WAS ASKING YOU  
09:49AM 10 QUESTIONS, THEY WERE TALKING ABOUT 1287, BUT THEY DIDN'T SHOW  
09:49AM 11 YOU THIS EXHIBIT; RIGHT?

09:49AM 12 A. NO.

09:49AM 13 Q. AND IF YOU LOOK AT THE TOP TWO EMAILS, WHICH WE'RE NOW  
09:49AM 14 SEEING FOR THE FIRST TIME, DANIEL YOUNG WRITES AN EMAIL ON  
09:49AM 15 NOVEMBER 30TH AT 11:27 A.M.

09:49AM 16 DO YOU SEE THAT?

09:49AM 17 A. YES.

09:49AM 18 Q. AND HE WAS THE MOST SENIOR SCIENTIST AT THERANOS; IS THAT  
09:49AM 19 FAIR?

09:49AM 20 A. YES.

09:49AM 21 Q. AND DR. YOUNG WROTE, "ONE OF THE QC RUNS PASSED (AFTER THE  
09:50AM 22 SOP WAS FOLLOWED APPROPRIATELY) ."

09:50AM 23 DO YOU SEE THAT?

09:50AM 24 A. YES.

09:50AM 25 Q. AND SO DR. YOUNG HAD DETERMINED THAT THE -- FOR THAT

09:50AM 1 PARTICULAR RUN, THE PERSON WHO WAS RUNNING THE QC HAD NOT  
09:50AM 2 FOLLOWED THE SOP?

09:50AM 3 A. CORRECT.

09:50AM 4 Q. AND THAT PERSON WAS YOU?

09:50AM 5 A. CORRECT.

09:50AM 6 Q. AND SO AT THIS POINT IN TIME, NOVEMBER 30TH, 2013, AM I  
09:50AM 7 RIGHT THAT YOU HAD BEEN AT THE COMPANY FOR ABOUT SIX WEEKS?

09:50AM 8 A. YES.

09:50AM 9 Q. IF YOU LOOK AT THE VERY TOP EMAIL, IT'S AN EMAIL FROM  
09:50AM 10 MS. HOLMES TO THE SAME GROUP AND SHE WRITES, "WE NEED TO  
09:50AM 11 RETRAIN."

09:50AM 12 DO YOU SEE THAT?

09:50AM 13 A. I SEE THAT.

09:50AM 14 Q. DO YOU HAVE 1525 IN YOUR BINDER, MS. CHEUNG?

09:51AM 15 A. I DO NOT. I ONLY HAVE 1524.

09:51AM 16 Q. LET'S MOVE ON TO 1548.

09:51AM 17 EXHIBIT 1548 IS AN EXHIBIT THAT YOU SAW DURING YOUR DIRECT  
09:51AM 18 EXAMINATION, MS. CHEUNG?

09:51AM 19 A. THAT IS CORRECT.

09:51AM 20 Q. AND THIS ONE IS THE EMAIL FROM, AT LEAST THE MIDDLE EMAIL  
09:51AM 21 ON THE FIRST PAGE, IT'S FROM LAGLY GEE, THE QUALITY CONTROL  
09:51AM 22 MANAGER, TO A GROUP OF PEOPLE, INCLUDING YOURSELF, WITH AN  
09:51AM 23 ATTACHED PROFICIENCY RESULT.

09:51AM 24 DO YOU SEE THAT?

09:51AM 25 A. YES.



09:51AM 1 Q. AND THEN YOU SPENT SOME TIME WITH MR. BOSTIC LOOKING AT  
09:51AM 2 THE DATA, IF YOU GO TO THE ATTACHMENT TO THE EXHIBIT?

09:51AM 3 A. YES.

09:51AM 4 Q. AND THIS INVOLVED RUNNING SAMPLES FROM THE NEW YORK STATE  
09:52AM 5 LAB ON BOTH EDISON AND CERTAIN COMMERCIAL DEVICES WHICH ARE  
09:52AM 6 REFERRED TO AS PREDICATES SOMETIMES; RIGHT?

09:52AM 7 A. THAT IS CORRECT.

09:52AM 8 Q. AND THEN YOU WENT THROUGH THE DATA WITH MR. BOSTIC;  
09:52AM 9 CORRECT?

09:52AM 10 A. YES.

09:52AM 11 Q. OKAY. THOSE NEW YORK STATE SAMPLES, DO YOU KNOW WHAT THE  
09:52AM 12 NATURE OF THOSE SAMPLES ARE?

09:52AM 13 A. IN WHAT CONTEXT -- WHAT DO YOU MEAN?

09:52AM 14 Q. WHAT ARE THE SAMPLES MADE OUT OF FROM THE NEW YORK LAB?

09:52AM 15 A. IT COULD VARY, BUT I'M NOT SURE.

09:52AM 16 Q. YOU DON'T KNOW SPECIFICALLY WITH RESPECT TO THOSE SAMPLES?

09:52AM 17 A. CORRECT.

09:52AM 18 Q. OKAY. SO WERE YOU AWARE THAT CMS HAS REGULATIONS ABOUT  
09:52AM 19 LABORATORIES HAVING TO DO PROFICIENCY TESTING?

09:52AM 20 A. YES.

09:52AM 21 Q. AND CMS'S REGULATIONS ACTUALLY REQUIRE AT CERTAIN  
09:53AM 22 INTERVALS THAT LABS DO THAT; RIGHT?

09:53AM 23 A. CORRECT.

09:53AM 24 Q. AND IT'S SORT OF A TEST TO MAKE SURE THAT A LAB IS  
09:53AM 25 OPERATING CORRECTLY; IS THAT FAIR?

09:53AM 1 A. YES. YOU NEED IT TO MAINTAIN YOUR CERTIFICATION.

09:53AM 2 Q. RIGHT. AND DO YOU UNDERSTAND THAT CMS, FOR MANY TESTS,

09:53AM 3 ALLOWS VERY WIDE VARIABILITY IN WHAT THE RESULTS COULD BE IN

09:53AM 4 ORDER TO STILL PASS PROFICIENCY TESTING?

09:53AM 5 A. NO.

09:53AM 6 Q. OKAY. IF YOU COULD TAKE A LOOK AT -- I THINK IT MIGHT BE

09:53AM 7 IN THE DEFENSE BINDER, BUT THE FIRST OF THOSE, AND IT'S

09:53AM 8 EXHIBIT 7603 LETTERS BB?

09:54AM 9 A. IS IT IN VOLUME 1?

09:54AM 10 Q. YES, I THINK SO.

09:54AM 11 A. WHAT WAS THE NUMBER AGAIN?

09:54AM 12 Q. I'M SORRY, 7603 AND THEN BB, B AS IN BOY, B AS IN BOY?

09:54AM 13 A. OKAY.

09:54AM 14 Q. OKAY. IF YOU TAKE A LOOK AT 7603BB, DO YOU RECOGNIZE THIS

09:54AM 15 AS CERTAIN REGULATIONS FOR THE CENTERS OF MEDICARE AND MEDICAID

09:54AM 16 SERVICES?

09:54AM 17 A. YES.

09:54AM 18 Q. AND THE ONE THAT IS LABELED SECTION 493.931 INVOLVES

09:54AM 19 ROUTINE CHEMISTRY?

09:54AM 20 A. CORRECT.

09:54AM 21 Q. AND IT -- YOU SEE, IF YOU JUST READ IT QUICKLY WITHOUT

09:54AM 22 READING IT OUT LOUD, YOU SEE IT RELATES TO PROFICIENCY TESTING;

09:54AM 23 CORRECT?

09:54AM 24 A. YES.

09:54AM 25 MR. COOPERSMITH: YOUR HONOR, I OFFER EXHIBIT 7603

09:55AM 1 AS A REGULATION OF THE CENTERS FOR MEDICARE AND MEDICAID  
09:55AM 2 SERVICES, A GOVERNMENT AGENCY.  
09:55AM 3 MR. BOSTIC: FOUNDATION AND RELEVANCE, YOUR HONOR.  
09:55AM 4 THE COURT: YOU'RE OFFERING THIS AS A CERTIFIED  
09:55AM 5 GOVERNMENT PUBLICATION?  
09:55AM 6 MR. COOPERSMITH: IT'S A PUBLICATION OF THE  
09:55AM 7 U.S. GOVERNMENT. IT --  
09:55AM 8 THE COURT: CAN YOU LAY A FOUNDATION FOR THAT?  
09:55AM 9 MR. COOPERSMITH: WELL, I THINK SHE ALREADY  
09:55AM 10 TESTIFIED, YOUR HONOR, THAT SHE RECOGNIZES IT AS A REGULATION  
09:55AM 11 FROM CMS.  
09:55AM 12 THE COURT: CAN YOU LAY A FOUNDATION?  
09:55AM 13 MR. COOPERSMITH: YES, YOUR HONOR, I'LL ASK SOME  
09:55AM 14 MORE QUESTIONS.  
09:55AM 15 THE COURT: SURE.  
09:55AM 16 BY MR. COOPERSMITH:  
09:55AM 17 Q. MS. CHEUNG, YOU UNDERSTAND THAT CMS IS THE REGULATOR FOR  
09:55AM 18 CLINICAL LABORATORIES IN THE UNITED STATES?  
09:55AM 19 A. YES.  
09:55AM 20 Q. AND THAT IN ORDER TO DO THEIR WORK, THE CMS GOVERNMENT  
09:55AM 21 AGENCY ISSUES REGULATIONS?  
09:55AM 22 A. CAN YOU REPEAT THAT QUESTION.  
09:55AM 23 Q. IN ORDER TO GOVERN OR REGULATE THE LABORATORIES, YOU  
09:55AM 24 UNDERSTAND THAT CMS ACTUALLY ISSUES REGULATIONS?  
09:56AM 25 A. CORRECT.

09:56AM 1 Q. AND LABORATORIES LIKE THE THERANOS LABORATORY THAT WAS  
09:56AM 2 OPERATING WHILE YOU WERE THERE, HAVE TO FOLLOW THOSE  
09:56AM 3 REGULATIONS?

09:56AM 4 A. CORRECT.

09:56AM 5 Q. AND ONE OF THE THINGS THAT CMS REQUIRES IS PROFICIENCY  
09:56AM 6 TESTING IN REGULATIONS?

09:56AM 7 A. CAN YOU REPEAT THAT QUESTION.

09:56AM 8 Q. ONE OF THE THINGS THAT CMS REGULATES AND REQUIRES IS  
09:56AM 9 SOMETHING CALLED PROFICIENCY TESTING?

09:56AM 10 A. CORRECT.

09:56AM 11 Q. AND YOU UNDERSTAND THAT THE REGULATION WE'RE LOOKING AT IN  
09:56AM 12 EXHIBIT 7603 BB IS ONE SUCH REGULATION THAT DEALS WITH  
09:56AM 13 PROFICIENCY TESTING?

09:56AM 14 A. I'VE NEVER SEEN THIS BEFORE, SO I'M NOT SURE BUT --

09:56AM 15 Q. OKAY.

09:56AM 16 A. I DON'T KNOW.

09:56AM 17 Q. WELL, YOU SEE THAT IT'S SECTION 493.931?

09:56AM 18 A. YES.

09:56AM 19 Q. AND DO YOU SEE IF YOU LOOK AT SECTION A, IT USES THE WORD  
09:56AM 20 PROFICIENCY TESTING IN THERE, AND THAT'S WHAT THE REGULATION IS  
09:56AM 21 ABOUT.

09:56AM 22 DO YOU SEE THAT?

09:56AM 23 A. THIS IS FOR A CHEMISTRY PROGRAM?

09:57AM 24 Q. THIS IS FOR ROUTINE CHEMISTRY, RIGHT.

09:57AM 25 A. WHAT WAS YOUR INITIAL QUESTION?

09:57AM 1 Q. WELL, JUST LET ME START AGAIN.

09:57AM 2 YOU RECOGNIZE THIS, WHETHER YOU'VE SEEN IT BEFORE OR NOT,  
09:57AM 3 YOU RECOGNIZE THIS AS ONE OF THE REGULATIONS THAT CMS PUTS OUT  
09:57AM 4 DEALING WITH PROFICIENCY TESTING?

09:57AM 5 A. YES.

09:57AM 6 MR. COOPERSMITH: YOUR HONOR, WE OFFER 7603BB. I  
09:57AM 7 THINK THE COURT COULD TAKE JUDICIAL NOTICE THAT THIS IS A  
09:57AM 8 GOVERNMENT REGULATION.

09:57AM 9 MR. BOSTIC: SAME OBJECTION, YOUR HONOR.

09:57AM 10 THE COURT: ARE YOU ASKING THAT PAGE 58 ALSO BE  
09:57AM 11 ADMITTED?

09:57AM 12 MR. COOPERSMITH: YES, YOUR HONOR. IT'S PART OF  
09:57AM 13 THAT SAME REGULATION.

09:57AM 14 THE COURT: ENDOCRINOLOGY.

09:57AM 15 MR. COOPERSMITH: NO -- THAT ONE. IT'S JUST THE  
09:57AM 16 NUMBER 493.931.

09:58AM 17 THE COURT: IS THAT FOUND ON PAGE 58?

09:58AM 18 MR. COOPERSMITH: THE REGULATION IN QUESTION THAT  
09:58AM 19 I'M REFERRING TO, YOUR HONOR, STARTS ON PAGE 57, AND IT'S THE  
09:58AM 20 LONGER REGULATION ON THAT PAGE STARTING WITH .931, AND THEN IT  
09:58AM 21 CONTINUES ON TO PAGE 58 AS THE, YOU KNOW, THE REST OF IT.

09:58AM 22 THE COURT: RIGHT. SO DO YOU WANT TO STRIKE THEN  
09:58AM 23 THE ENDOCRINOLOGY PORTION?

09:58AM 24 MR. COOPERSMITH: YES, WE COULD REDACT THAT.

09:58AM 25 AND ALSO WE CAN REDACT THE SMALLER REGULATION ON THE TOP

09:58AM 1  
09:59AM 2  
09:59AM 3  
09:59AM 4  
09:59AM 5  
09:59AM 6  
09:59AM 7  
09:59AM 8  
09:59AM 9  
09:59AM 10  
09:59AM 11  
09:59AM 12  
09:59AM 13  
09:59AM 14  
09:59AM 15  
09:59AM 16  
09:59AM 17  
09:59AM 18  
09:59AM 19  
09:59AM 20  
09:59AM 21  
09:59AM 22  
09:59AM 23  
09:59AM 24  
09:59AM 25

OF PAGE 57 AS WELL.

THE COURT: 58?

MR. COOPERSMITH: WE WOULD REDACT SECTION 933 ON  
PAGE 58, AND WE WOULD REDACT SECTION 929 ON PAGE 57.

THE COURT: ALL RIGHT. THANK YOU.

WITH THOSE REDACTIONS, IT WILL BE ADMITTED, AND IT MAY BE  
PUBLISHED WITH THOSE REDACTIONS.

MR. COOPERSMITH: YES, YOUR HONOR.

(DEFENDANT'S EXHIBIT 7603BB, WITH REDACTIONS, WAS RECEIVED  
IN EVIDENCE.)

MR. COOPERSMITH: MR. ALLEN, CAN YOU MAKE THOSE  
REDACTIONS.

Q. NOW, LOOKING AT THE REGULATION YOU SEE, FOR NOW, LOOKING  
IN PARTICULAR AT 493.931?

A. CORRECT.

Q. AND THAT'S TITLED ROUTINE CHEMISTRY.

DO YOU SEE THAT?

A. YES.

Q. AND IF YOU GO TO SECTION A THAT IS ON THE SCREEN RIGHT NOW  
IT SAYS, "PROGRAM CONTENT AND FREQUENCY OF CHALLENGE.

DO YOU SEE THAT?

A. CORRECT.

Q. AND IT GOES ON TO SAY, "TO BE APPROVED FOR PROFICIENCY  
TESTING FOR ROUTINE CHEMISTRY, A PROGRAM MUST PROVIDE A MINIMUM  
OF FIVE SAMPLES PER TESTING EVENT. THERE MUST BE AT LEAST

10:00AM 1 THREE TESTING EVENTS AT APPROXIMATELY EQUAL INTERVALS PER  
10:00AM 2 YEAR," AND IT GOES ON.

10:00AM 3 DO YOU SEE THAT?

10:00AM 4 A. YES.

10:00AM 5 Q. AND SO THIS IS A REGULATION GOVERNING PROFICIENCY TESTING  
10:00AM 6 FOR A PARTICULAR TYPE OF BLOOD TESTING CALLED ROUTINE  
10:00AM 7 CHEMISTRY; RIGHT?

10:00AM 8 A. RIGHT.

10:00AM 9 Q. AND IF YOU GO TO THE SECTION ON THE SECOND COLUMN THERE,  
10:00AM 10 AND IT'S ACTUALLY SECTION B(2) OF THE REGULATION.

10:00AM 11 IF YOU WANT TO BLOW THAT UP, MR. ALLEN, THAT WOULD BE  
10:00AM 12 GREAT. THANK YOU.

10:00AM 13 IT SAYS, "FOR QUANTITATIVE CHEMISTRY TESTS FOR ANALYTES,  
10:00AM 14 THE PROGRAM MUST DETERMINE THE CORRECT RESPONSE FOR EACH  
10:00AM 15 ANALYTE BY THE DISTANCE OF THE RESPONSE FROM THE TARGET VALUE."

10:00AM 16 DO YOU SEE THAT?

10:00AM 17 A. CORRECT.

10:00AM 18 Q. AND THIS IS GOVERNING WHAT RESULTS WOULD PASS AND WHAT  
10:00AM 19 WOULDN'T PASS; RIGHT?

10:00AM 20 A. YEAH, FOR GENERAL CHEMISTRY IT LOOKS LIKE.

10:01AM 21 Q. RIGHT. AND IF YOU GO DOWN BELOW YOU SEE THERE IS A  
10:01AM 22 SECTION RIGHT BELOW THE TEST WE ARE LOOKING AT IS CRITERIA FOR  
10:01AM 23 ACCEPTABLE PERFORMANCE.

10:01AM 24 DO YOU SEE THAT?

10:01AM 25 A. CORRECT.

10:01AM 1 Q. AND IT HAS A TABLE THERE. AND THE LEFT COLUMN IT SAYS  
10:01AM 2 ANALYTE OR TEST?

10:01AM 3 A. YES.

10:01AM 4 Q. AND ON THE RIGHT COLUMN IT SAYS CRITERIA FOR ACCEPTABLE  
10:01AM 5 PERFORMANCE.

10:01AM 6 DO YOU SEE THAT?

10:01AM 7 A. YES.

10:01AM 8 Q. AND SO LET'S LOOK AT SOME OF THESE.

10:01AM 9 SO, FOR EXAMPLE, FOR AN ASSAY CALLED ALANINE  
10:01AM 10 AMINOTRANSFERASE (ALT/SGPT) --

10:01AM 11 A. CORRECT.

10:01AM 12 Q. -- THAT PARTICULAR ASSAY, IN ORDER TO BE ACCEPTABLE, IT  
10:01AM 13 HAS TO BE WITHIN PLUS OR MINUS OF 20 PERCENT OF THE TARGET  
10:01AM 14 VALUE.

10:01AM 15 DO YOU SEE THAT?

10:01AM 16 A. YES. THESE ARE ALL GENERAL CHEMISTRY ASSAYS.

10:01AM 17 Q. RIGHT.

10:01AM 18 A. THEY'RE NOT EDISON ASSAYS.

10:01AM 19 Q. I UNDERSTAND THAT.

10:01AM 20 BUT FOR GENERAL CHEMISTRY, THAT PARTICULAR ASSAY THAT I  
10:01AM 21 JUST REFERRED TO THE PROFICIENCY TESTING TEST RESULT WOULD HAVE  
10:01AM 22 TO BE WITHIN PLUS OR MINUS OF 20 PERCENT IN ORDER TO PASS;  
10:02AM 23 RIGHT?

10:02AM 24 A. CORRECT. YES.

10:02AM 25 Q. AND LET'S LOOK AT, FOR EXAMPLE, CREATINE KINASE. AND DO



10:02AM 1 YOU UNDERSTAND THAT THAT'S A TEST THAT DEALS WITH PARTICULAR  
10:02AM 2 ASPECTS OF LIVER FUNCTION?

10:02AM 3 A. I DON'T KNOW.

10:02AM 4 Q. YOU DON'T KNOW THAT?

10:02AM 5 A. I DON'T KNOW.

10:02AM 6 Q. OKAY. BUT IN ANY EVENT, CREATINE KINASE, IT HAS A TARGET  
10:02AM 7 VALUE OF PLUS OR MINUS 30 PERCENT TO BE ACCEPTABLE.

10:02AM 8 DO YOU SEE THAT?

10:02AM 9 A. CORRECT.

10:02AM 10 Q. AND SO TWO RESULTS COULD BE AS MUCH AS 30 PERCENT, OR MORE  
10:02AM 11 ACTUALLY, APART AND STILL BE ACCEPTABLE UNDER THE REGULATION;  
10:02AM 12 RIGHT?

10:02AM 13 A. YES.

10:02AM 14 Q. OKAY. SO DO YOU HAVE A LOT OF KNOWLEDGE, MS. CHEUNG,  
10:02AM 15 ABOUT HOW BLOOD TESTING ASSAYS, EVEN ON COMMERCIAL MACHINES FOR  
10:02AM 16 THINGS LIKE ROUTINE CHEMISTRY, CAN VARY QUITE A LOT AND STILL  
10:02AM 17 BE DEEMED TO PASS PROFICIENCY TESTING?

10:02AM 18 A. THEY CAN VARY BY SOME SORT OF STANDARD DEVIATION, YES.

10:02AM 19 Q. OKAY. AND IN SOME CASES, LIKE FOR SOME ASSAYS, SUCH AS  
10:03AM 20 THE ONES WE LOOKED AT, IT COULD BE AS MUCH AS 30 PERCENT?

10:03AM 21 A. YEAH, ACCORDING TO THE REGULATIONS.

10:03AM 22 Q. OKAY. AND IF YOU WANT TO BROWSE THROUGH THAT, THERE ARE  
10:03AM 23 OTHERS THAT HAVE SIMILAR CRITERIA FOR ACCEPTABLE PERFORMANCE.

10:03AM 24 FOR EXAMPLE, FOR CHOLESTEROL ON THE FIRST PAGE, THAT'S  
10:03AM 25 PLUS OR MINUS 30 PERCENT; RIGHT?

10:03AM 1 A. RIGHT.

10:03AM 2 Q. OKAY. SO IS IT FAIR TO SAY THAT WHEN YOU'RE RUNNING

10:03AM 3 PROFICIENCY TESTING ON SAMPLES, THAT EVEN CMS DOESN'T EXPECT

10:03AM 4 THAT YOU'RE GOING TO GET IDENTICAL NUMBERS EVERY TIME YOU RUN A

10:03AM 5 SAMPLE; CORRECT?

10:03AM 6 A. THAT IS CORRECT.

10:03AM 7 Q. AND YOU'RE NOT SAYING THAT, EITHER; RIGHT?

10:03AM 8 A. NO. IT'S TYPICALLY WITHIN SOME SORT OF RANGE.

10:03AM 9 Q. RIGHT. LET'S TAKE A LOOK AT EXHIBIT 9939. THAT SHOULD BE

10:04AM 10 IN THE SAME BINDER.

10:04AM 11 OKAY. EXHIBIT 9939 YOU SEE IS A THERANOS STANDARD

10:04AM 12 OPERATING PROCEDURE FOR THE CLINICAL LAB?

10:04AM 13 A. YES.

10:04AM 14 Q. AND YOU SEE THE TITLE IS PROFICIENCY TESTING FOR THERANOS

10:04AM 15 LAB DEVELOPED TESTS: EDISON 3.5?

10:04AM 16 A. YES.

10:04AM 17 Q. AND THEN YOU SEE THE SIGNATURES OF LI DING-CHIANG AS THE

10:04AM 18 AUTHOR.

10:04AM 19 DO YOU SEE THAT?

10:04AM 20 A. YES.

10:04AM 21 Q. DATED DECEMBER 2ND, 2013?

10:04AM 22 A. YES.

10:04AM 23 Q. AND THAT WAS WHILE YOU WERE AT THERANOS?

10:04AM 24 A. YES.

10:05AM 25 Q. AND THEN YOU SEE THE REVIEWER LISTED HERE AS DANIEL YOUNG,

10:05AM 1 AND YOU SEE THE SIGNATURE ABOVE DANIEL YOUNG, PH.D.?

10:05AM 2 A. YES.

10:05AM 3 Q. AND THAT'S ALSO SIGNED ON 12-2-2013?

10:05AM 4 A. YES.

10:05AM 5 Q. AND THEN BELOW THAT THERE'S AN APPROVER FOR THE STANDARD  
10:05AM 6 OPERATING PROCEDURES, AND THAT'S DR. ROSENDORFF.

10:05AM 7 DO YOU SEE THAT?

10:05AM 8 A. CORRECT.

10:05AM 9 Q. AND HE ALSO SIGNED ON DECEMBER 2, 2013?

10:05AM 10 A. YES.

10:05AM 11 MR. COOPERSMITH: YOUR HONOR, WE OFFER 9939.

10:05AM 12 MR. BOSTIC: FOUNDATION. AUTHENTICATION.

10:05AM 13 THE COURT: CAN YOU LAY A FOUNDATION THROUGH THIS  
10:05AM 14 WITNESS?

10:05AM 15 MR. COOPERSMITH: YES, YOUR HONOR.

10:05AM 16 Q. MS. CHEUNG, YOU UNDERSTAND THAT THERANOS HAD STANDARD  
10:05AM 17 OPERATING PROCEDURES?

10:05AM 18 A. YES.

10:05AM 19 Q. AND YOU'VE SEEN OTHER EXAMPLES OF THE COMPANY HAVING THOSE  
10:05AM 20 PROCEDURES IN THIS FORMAT WHERE IT HAS REVIEWER AND APPROVER  
10:05AM 21 SIGNATURES ON THE FIRST PAGE JUST LIKE WE SEE IN THIS EXHIBIT;  
10:05AM 22 RIGHT?

10:05AM 23 A. YES.

10:05AM 24 Q. AND YOU UNDERSTAND THAT THERANOS KEPT THOSE ON FILE SO  
10:05AM 25 PEOPLE COULD REFER TO THEM FROM TIME TO TIME?

10:05AM 1

A. YES.

10:05AM 2

Q. AND THAT WAS NECESSARY FOR THE LABORATORY PERSONNEL TO DO

10:06AM 3

THEIR WORK; IS THAT RIGHT?

10:06AM 4

A. YES, CORRECT.

10:06AM 5

Q. AND THAT THE CONCEPT FOR STANDARD OPERATING PROCEDURES WAS

10:06AM 6

TO HAVE OPERATING PROCEDURES SO EVERYONE COULD REFER TO SO THEY

10:06AM 7

COULD ALL BE CONSISTENT IN HOW THEY WENT ABOUT TESTING BLOOD

10:06AM 8

SAMPLES?

10:06AM 9

A. THAT IS CORRECT.

10:06AM 10

Q. OR DOING OTHER ACTIVITIES OF THE LAB?

10:06AM 11

A. YES.

10:06AM 12

MR. COOPERSMITH: YOUR HONOR, I OFFER 9939.

10:06AM 13

MR. BOSTIC: AUTHENTICATION.

10:06AM 14

THE COURT: I THINK SHE NEEDS TO SPEAK TO HER

10:06AM 15

KNOWLEDGE ABOUT THE DOCUMENT.

10:06AM 16

MR. COOPERSMITH: OKAY. WELL, I'LL ASK THAT

10:06AM 17

DIRECTLY THEN.

10:06AM 18

Q. MS. CHEUNG, THIS WAS SIGNED, AS WE JUST DISCUSSED, WHILE

10:06AM 19

YOU WERE THERE.

10:06AM 20

DID YOU SEE THIS STANDARD OPERATING PROCEDURE?

10:06AM 21

A. I DON'T REMEMBER SEEING THIS.

10:06AM 22

Q. SO YOU NEVER SAW IT?

10:06AM 23

A. YES.

10:06AM 24

Q. SO IF THE OPERATING PROCEDURE FOR PROFICIENCY TESTING FOR

10:06AM 25

THERANOS VARIED FROM THAT EXHIBIT THAT YOU LOOKED AT BEFORE

10:07AM 1 THAT YOU WENT OVER WITH MR. BOSTIC --

10:07AM 2 A. UH-HUH.

10:07AM 3 Q. -- WHERE YOU TESTED NEW YORK SAMPLES --

10:07AM 4 A. UH-HUH.

10:07AM 5 Q. -- IF THE STANDARD OPERATING PROCEDURES FOR THERANOS FOR  
10:07AM 6 PROFICIENCY TESTING WAS DIFFERENT, YOU JUST WOULDN'T KNOW THAT;  
10:07AM 7 IS THAT RIGHT?

10:07AM 8 A. COULD YOU REPEAT THAT QUESTION.

10:07AM 9 Q. SO IF THE STANDARD OPERATING PROCEDURES THERANOS USED OR  
10:07AM 10 HAD IN PLACE FOR PROFICIENCY TESTING FOR EDISON DEVICES --

10:07AM 11 A. CORRECT.

10:07AM 12 Q. -- IF THAT WAS A DIFFERENT PROCEDURE COMPARED TO THE  
10:07AM 13 EXHIBIT THAT YOU LOOKED AT WITH MR. BOSTIC WHERE SOME NEW YORK  
10:07AM 14 SAMPLES WERE TESTED --

10:07AM 15 A. CORRECT.

10:07AM 16 Q. -- YOU WOULDN'T KNOW ANYTHING ABOUT THAT BECAUSE YOU'VE  
10:07AM 17 NEVER SEEN THIS DOCUMENT; RIGHT?

10:07AM 18 A. I JUST DON'T REMEMBER.

10:07AM 19 MR. COOPERSMITH: YOUR HONOR, I'D LIKE TO OFFER THIS  
10:07AM 20 EXHIBIT. IF WE CAN'T AUTHENTICATE IT THROUGH MS. CHEUNG, WE  
10:07AM 21 EXPECT THERE WILL BE ANOTHER WITNESS THAT WILL BE CALLED WHO  
10:07AM 22 SIGNED THE DOCUMENT. SO WE WOULD LIKE TO CONDITIONALLY ADMIT  
10:07AM 23 IT UNDER RULE 104.

10:07AM 24 MR. BOSTIC: SAME OBJECTIONS, YOUR HONOR.

10:07AM 25 THE COURT: DOES THE GOVERNMENT ANTICIPATE THAT ONE

10:08AM 1 OF THE SIGNATORS OF THIS DOCUMENT WILL TESTIFY?

10:08AM 2 MR. BOSTIC: IT'S POSSIBLE, YOUR HONOR.

10:08AM 3 THE COURT: ALL RIGHT. LADIES AND GENTLEMEN, I'M  
10:08AM 4 GOING TO ADMIT THIS DOCUMENT CONDITIONALLY.

10:08AM 5 LET ME JUST STATE, IN THE COURT'S OPINION, I WOULD SUSTAIN  
10:08AM 6 THE OBJECTION THAT THERE'S BEEN A LACK OF AUTHENTICATION, THAT  
10:08AM 7 IS, THAT THIS WITNESS HAS NOT SEEN THIS BEFORE AND HAS NO  
10:08AM 8 FAMILIARITY WITH IT SPECIFICALLY.

10:08AM 9 I'M GOING TO ADMIT IT NOW AND ALLOW QUESTIONS IN THIS  
10:08AM 10 EXAMINATION ON THE CONDITION THAT A WITNESS AT SOME TIME IN THE  
10:08AM 11 FUTURE TESTIFY AS TO THE AUTHENTICITY OF THIS DOCUMENT.

10:08AM 12 IF THAT DOESN'T HAPPEN, I'M GOING TO STRIKE THE TESTIMONY  
10:08AM 13 AND DISALLOW THIS EXHIBIT TO BE ADMITTED.

10:09AM 14 SO ON THAT CONDITION, I'LL ALLOW ITS ADMISSIBILITY ON A  
10:09AM 15 CONDITIONAL ADMISSIBILITY SUBJECT TO APPROPRIATE  
10:09AM 16 AUTHENTICATION.

10:09AM 17 MR. COOPERSMITH: THANK YOU, YOUR HONOR.

10:09AM 18 (DEFENDANT'S EXHIBIT 9939 WAS CONDITIONALLY RECEIVED IN  
10:09AM 19 EVIDENCE.)

10:09AM 20 MR. COOPERSMITH: OKAY. NOW I THINK WE CAN PUBLISH  
10:09AM 21 IT.

10:09AM 22 Q. SO YOU SEE WE WERE JUST TALKING ABOUT ON THE FIRST PAGE IT  
10:09AM 23 HAS THOSE SIGNATURES THAT WE DISCUSSED INCLUDING DR. YOUNG AND  
10:09AM 24 DR. ROSENDORFF?

10:09AM 25 A. CORRECT.

10:09AM 1 Q. JUST SO WE CAN ALL SEE IT NOW; RIGHT?

10:09AM 2 A. YEAH.

10:09AM 3 Q. AND THEN IF YOU GO TO PAGE 3, AND AT THE VERY BOTTOM THERE  
10:09AM 4 ARE PAGE NUMBERS, AND I'M LOOKING AT PAGE 3 OF 8. IF YOU COULD  
10:09AM 5 FIND THAT, THAT WOULD BE GREAT?

10:09AM 6 A. YES.

10:09AM 7 Q. AND ON PAGE 3 OF 8 IT STATES IN SECTION 1 THE PURPOSE OF  
10:09AM 8 THE STANDARD OPERATING PROCEDURE.

10:09AM 9 DO YOU SEE THAT?

10:09AM 10 AND SECTION 1.1 SAYS, "THE PURPOSE OF THIS PROPOSAL IS TO  
10:09AM 11 DEVISE AN ALTERNATIVE ASSESSMENT PROTOCOL (AAP) FOR  
10:09AM 12 LABORATORY-DEVELOPED TESTS ON THE EDISON 3.5 IMMUNOASSAY  
10:10AM 13 INSTRUMENT."

10:10AM 14 DO YOU SEE THAT?

10:10AM 15 A. YES.

10:10AM 16 Q. AND YOU UNDERSTAND THAT ALTERNATIVE ASSESSMENT PROTOCOL,  
10:10AM 17 OR AAP, WAS A WAY THAT LABORATORIES TEST BLOOD TESTING  
10:10AM 18 INSTRUMENTS, DO PROFICIENCY TESTING OF BLOOD TESTING  
10:10AM 19 INSTRUMENTS WHEN IT DOESN'T HAVE WHAT IS CALLED A PEER GROUP?

10:10AM 20 A. YES.

10:10AM 21 Q. SO, FOR EXAMPLE, IF A LABORATORY IS RUNNING SOMETHING LIKE  
10:10AM 22 THE SIEMENS ADVIA 1800?

10:10AM 23 A. UH-HUH.

10:10AM 24 Q. YOU UNDERSTAND THAT THERE ARE MANY LABS AROUND THE COUNTRY  
10:10AM 25 WHO RUN A SIEMENS ADVIA 1800?

10:10AM 1 A. CORRECT.

10:10AM 2 Q. AND SO THAT THE PROFICIENCY TESTING AGENCY OR ORGANIZATION

10:10AM 3 CAN COMPARE THE RESULTS OF THE LABORATORY RUNNING THAT DEVICE,

10:10AM 4 THE ORGANIZATION CAN -- THE PROFICIENCY TESTING ORGANIZATION

10:10AM 5 CAN COMPARE A LABORATORY RUNNING THAT PARTICULAR DEVICE WITH

10:10AM 6 ALL OF THE OTHER LABORATORIES AROUND THE COUNTRY WHO ARE ALSO

10:10AM 7 RUNNING THAT SAME DEVICE?

10:10AM 8 A. CORRECT.

10:10AM 9 Q. BUT WHEN YOU HAVE AN EMERGING TECHNOLOGY OR A NEW

10:11AM 10 TECHNOLOGY, OTHER LABS MAY NOT BE RUNNING THAT SAME TECHNOLOGY?

10:11AM 11 A. CORRECT.

10:11AM 12 Q. AND YOU UNDERSTAND THAT AAP IS A WAY TO STILL ACHIEVE

10:11AM 13 PROFICIENCY TESTING WHEN THERE IS NO OTHER COMPARATORS?

10:11AM 14 A. YES.

10:11AM 15 Q. AND THERE'S A PROCEDURE FOR THAT AT THERANOS THAT WE'RE

10:11AM 16 NOW LOOKING AT; RIGHT?

10:11AM 17 A. I BELIEVE SO, YES.

10:11AM 18 Q. AND IF WE GO TO PAGE 5 OF 8. DO YOU SEE THERE'S A SECTION

10:11AM 19 4 CALLED PROCEDURE?

10:11AM 20 A. YES.

10:11AM 21 Q. AND THE FIRST SECTION 4.1 SAYS, "OBTAIN 5 VENOUS CLINICAL

10:11AM 22 SAMPLES FROM AN IN-HOUSE COLLECTION."

10:11AM 23 DO YOU SEE THAT?

10:11AM 24 A. YES.

10:11AM 25 Q. AND AN IN-HOUSE COLLECTION MEANS I THINK WHAT YOU WERE



10:11AM 1 DESCRIBING LAST WEEK WHERE BLOOD SAMPLES ARE TAKEN FROM

10:11AM 2 EMPLOYEES WHO VOLUNTEER TO DO THAT?

10:11AM 3 A. CORRECT.

10:11AM 4 Q. AND YOU YOURSELF DID THAT FROM TIME TO TIME?

10:11AM 5 A. YES.

10:11AM 6 Q. AND SO THERE WERE ACTUAL BLOOD SAMPLES TAKEN FROM A REAL

10:11AM 7 PERSON WHO WORKED AT THERANOS?

10:11AM 8 A. CORRECT.

10:11AM 9 Q. AND NOT SAMPLES SENT BY SOME OUTSIDE PARTY LIKE THE

10:12AM 10 NEW YORK STATE TESTING LAB?

10:12AM 11 A. CORRECT.

10:12AM 12 Q. OR THE COLLEGE OF AMERICAN PATHOLOGISTS FOR THAT MATTER?

10:12AM 13 A. YES.

10:12AM 14 Q. OKAY. SO THEN IF YOU GO TO THE NEXT SECTION, SECTION 4.2

10:12AM 15 INDICATES HOW MUCH BLOOD SHOULD BE COLLECTED. IT'S

10:12AM 16 TEN MICROLITERS.

10:12AM 17 DO YOU SEE THAT?

10:12AM 18 A. YES.

10:12AM 19 Q. AND ON 4.3 IT SAYS, "SPLIT THE SAMPLES INTO 2 ALIQUOTS";

10:12AM 20 RIGHT?

10:12AM 21 AND "ALIQUOT" IS A WORD THAT LABORATORIES SOMETIMES USE;

10:12AM 22 RIGHT?

10:12AM 23 A. YEAH. IT JUST MEANS TWO CONTAINERS.

10:12AM 24 Q. RIGHT. SO SPLIT THE SAMPLES INTO TWO CONTAINERS; IS THAT

10:12AM 25 WHAT IT'S SAYING?

10:12AM 1 A. THAT'S CORRECT.

10:12AM 2 Q. AND THEN 4.4 SAYS, "RUN THE PREDICATE SIEMENS IMMULITE

10:12AM 3 2000 AND THE THERANOS LDT METHODS IN PARALLEL, USING N EQUALS 5

10:12AM 4 FOR EACH ASSAY, FOR EACH PATIENT SAMPLE."

10:12AM 5 DO YOU SEE THAT?

10:12AM 6 A. YES.

10:12AM 7 Q. AND SO IS IT FAIR TO SAY THAT THE BASIC IDERE HERE IS TO

10:13AM 8 RUN THE SAMPLE, TAKE THE SAMPLE, SPLIT IT INTO TWO CONTAINERS,

10:13AM 9 RUN ONE PART OF IT ON AN FDA APPROVED PREDICATE MACHINE, IN

10:13AM 10 THIS CASE CALLED THE SIEMENS IMMULITE 2000?

10:13AM 11 A. CORRECT.

10:13AM 12 Q. AND THEN RUN THE OTHER HALF OF THE SAMPLE ON THE THERANOS

10:13AM 13 LDT, IN THIS CASE THE EDISON DEVICE?

10:13AM 14 A. CORRECT.

10:13AM 15 Q. AND THE IDERE IS TO COMPARE THOSE TWO RESULTS?

10:13AM 16 A. YES.

10:13AM 17 Q. OKAY. NOW, IF WE GO TO 4.5, SECTION 4.5, THERE'S ACTUALLY

10:13AM 18 A STATISTICAL METHOD THAT IS USED IN MAKING THAT COMPARISON;

10:13AM 19 RIGHT?

10:13AM 20 A. YES.

10:13AM 21 Q. AND IT'S NOT JUST THE RAW DATA. THERE HAS TO BE SOME

10:13AM 22 STATISTICAL ADJUSTMENTS MADE, AT LEAST ACCORDING TO THE

10:13AM 23 PROTOCOL; IS THAT RIGHT?

10:13AM 24 A. YES.

10:13AM 25 Q. AND THEN ONE OF THEM IS 4.5, CALCULATE THE MEAN, SD, OR

10:13AM 1 STANDARD DEVIATION, AND PERCENT CV, OR COEFFICIENT OF  
10:13AM 2 VARIATION, FOR EACH ANALYTE ON EACH METHOD.

10:13AM 3 DO YOU SEE THAT?

10:13AM 4 A. YES.

10:13AM 5 Q. AND THEN 4.6 SAYS THE PROCEDURE IS TO CALCULATE THE  
10:14AM 6 AVERAGE BIAS OF THE THERANOS LDT TEST AS FOLLOWED AVERAGE BIAS  
10:14AM 7 EQUALS MEAN THERANOS MINUS MEAN IMMULITE/MEAN IMMULITE; RIGHT?

10:14AM 8 A. YES.

10:14AM 9 Q. THAT'S LIKE AN EQUATION; RIGHT?

10:14AM 10 A. YES.

10:14AM 11 Q. AND YOU WERE NOT INVOLVED IN DEVISING THOSE EQUATIONS?

10:14AM 12 A. NO.

10:14AM 13 Q. AND THERE WERE OTHER PEOPLE WHO HAD THAT EXPERTISE AT  
10:14AM 14 THERANOS WHO WERE DOING THAT?

10:14AM 15 A. CORRECT.

10:14AM 16 Q. AND THEN IF YOU GO TO THE ACCEPTANCE CRITERIA, SECTION 5,  
10:14AM 17 THIS SETS OUT WHAT WOULD BE DEEMED TO BE PASSING AND WHAT WOULD  
10:14AM 18 NOT BE DEEMED TO BE PASSING; RIGHT?

10:14AM 19 A. CORRECT.

10:14AM 20 Q. SO, FOR EXAMPLE, 5.2 SAYS, "IF AN ANALYTE FAILS MORE THAN  
10:14AM 21 20 PERCENT (1 OUT OF 5) OF THE PATIENT CLINICAL SAMPLES, THEN  
10:14AM 22 THE PROFICIENCY TESTING WILL BE DEEMED TO HAVE FAILED THE  
10:14AM 23 PROFICIENCY EVENT."

10:14AM 24 DO YOU SEE THAT?

10:14AM 25 A. YES.

10:14AM 1 Q. AND THEN 5.3 SAYS, "IF AN ANALYTE FAILS A PROFICIENCY  
10:14AM 2 EVENT, CORRECTIVE ACTIONS WILL BE IMPLEMENTED, ACCORDING TO,"  
10:15AM 3 AND IT REFERENCES ANOTHER QUALITY OPERATING PROCEDURE.

10:15AM 4 DO YOU SEE THAT?

10:15AM 5 A. YES.

10:15AM 6 Q. AND THEN 5.4 SAYS, "IF AN ANALYTE FAILS TWO CONSECUTIVE  
10:15AM 7 PROFICIENCY EVENTS, TESTING WILL BE DISCONTINUED FOR THAT  
10:15AM 8 ANALYTE, UNTIL SUCH TIME AS THE ASSAY IS CORRECTED, AND PASSED  
10:15AM 9 AAP PT RE-TESTING."

10:15AM 10 DO YOU SEE THAT?

10:15AM 11 A. YES.

10:15AM 12 Q. AND YOU AGREED WITH ME WHEN I WAS TALKING TO YOU LAST WEEK  
10:15AM 13 THAT FOLLOWING SOP'S IS AN IMPORTANT THING FOR A LABORATORY?

10:15AM 14 A. CORRECT.

10:15AM 15 Q. AND IF YOU GO TO PAGE 6 OF 8.

10:15AM 16 ACTUALLY, BEFORE I ASK YOU ABOUT THAT PAGE, YOU WOULD  
10:15AM 17 AGREE WITH ME THAT THE PROCESS THAT IS SET FORTH HERE THAT WE  
10:15AM 18 JUST WENT OVER TOGETHER TO GET PATIENT SAMPLES FROM EMPLOYEES,  
10:15AM 19 BLOOD SAMPLES FROM EMPLOYEES, AND RUN THOSE AND TAKE TWO  
10:15AM 20 CONTAINERS AND SPLIT THE SAMPLE, RUN THEM ON THE FDA COMMERCIAL  
10:15AM 21 MACHINE, RUN THEM ON THE THERANOS TECHNOLOGY MACHINE --

10:15AM 22 A. UH-HUH.

10:15AM 23 Q. -- AND THEN COMPARE THE RESULTS, THAT'S A DIFFERENT  
10:16AM 24 PROCEDURE THAN WHAT WAS DONE WITH EXHIBIT, THE EXHIBIT YOU WERE  
10:16AM 25 LOOKING AT WITH MR. BOSTIC, WHICH IS 1548?

10:16AM 1 A. CAN YOU REPEAT THAT QUESTION.

10:16AM 2 Q. SURE. YEAH. IT WAS A LONG QUESTION. SORRY ABOUT THAT.

10:16AM 3 SO LET'S GO TO EXHIBIT 1548 SO YOU HAVE THAT IN FRONT OF  
10:16AM 4 YOU.

10:16AM 5 A. OKAY.

10:16AM 6 Q. AND THAT WAS THE EXHIBIT THAT MR. BOSTIC WENT OVER WITH  
10:16AM 7 YOU ON DIRECT EXAMINATION?

10:16AM 8 A. YES.

10:16AM 9 Q. AND THIS IS THE -- IF YOU LOOK AT THE ATTACHMENT AND THE  
10:16AM 10 DATA, THIS WAS WHERE THERE WERE CERTAIN SAMPLES, THAT WHATEVER  
10:16AM 11 THEY WERE MADE OF, FROM NEW YORK STATE THAT WERE RUN ON THE  
10:16AM 12 PREDICATE MACHINES, THE COMMERCIAL MACHINES, AND THE THERANOS  
10:16AM 13 EDISON MACHINES; RIGHT?

10:16AM 14 A. CORRECT.

10:16AM 15 Q. AND THEN IF YOU GO BACK TO THE EXHIBIT THAT WE WERE JUST  
10:16AM 16 LOOKING AT 9939, YOU WOULD AGREE WITH ME, RIGHT, THAT THE  
10:16AM 17 PROCEDURE IN THE SOP THAT WE JUST WENT OVER, IS A DIFFERENT  
10:17AM 18 PROCEDURE.

10:17AM 19 LET ME SEE IF I CAN CLARIFY IT.

10:17AM 20 A. UH-HUH.

10:17AM 21 Q. IN THE FOLLOWING SENSE, IT'S ACTUAL BLOOD SAMPLES TAKEN  
10:17AM 22 FROM REAL LIVE EMPLOYEES WHO WORKED AT THERANOS AND NOT AN  
10:17AM 23 OUTSIDE SAMPLE SENT BY A THIRD PARTY LIKE A NEW YORK STATE LAB?

10:17AM 24 A. CORRECT.

10:17AM 25 JUROR: I'M SORRY, YOUR HONOR. PERMISSION TO GO TO

10:17AM 1 THE BATHROOM, PLEASE?

10:17AM 2 THE COURT: SURE. LET'S TAKE A BREAK.

10:17AM 3 JUROR: I APOLOGIZE. I CAN'T HOLD IT ANY LONGER.

10:17AM 4 THE COURT: WE'LL TAKE ABOUT A TEN MINUTE BREAK.

10:17AM 5 MR. COOPERSMITH: YES, OF COURSE, YOUR HONOR.

10:17AM 6 THE COURT: THANK YOU.

10:17AM 7 (RECESS FROM 10:17 A.M. UNTIL 10:33 A.M.)

10:33AM 8 THE COURT: WE'RE BACK ON THE RECORD. OUR JURY AND  
10:33AM 9 ALTERNATES ARE PRESENT.

10:33AM 10 MR. BALWANI AND HIS COUNSEL ARE PRESENT.

10:33AM 11 MS. CHEUNG IS BACK ON THE STAND.

10:33AM 12 COUNSEL, DO YOU WANT TO RESUME?

10:33AM 13 MR. COOPERSMITH: YES, YOUR HONOR. THANK YOU.

10:34AM 14 Q. MS. CHEUNG, BEFORE THE BREAK, WE WERE LOOKING AT  
10:34AM 15 EXHIBIT 9939.

10:34AM 16 DO YOU STILL HAVE THAT IN FRONT OF YOU?

10:34AM 17 A. YES.

10:34AM 18 Q. OKAY. I WANT YOU TO TAKE A LOOK AT THE PAGE IN THE  
10:34AM 19 EXHIBIT THAT IS NUMBERED 6 OF 8.

10:34AM 20 DO YOU SEE THERE'S A SECTION 7 THAT IS TITLED REFERENCES?

10:34AM 21 A. YES.

10:34AM 22 Q. AND DO YOU UNDERSTAND THAT THOSE ARE THE BASICALLY  
10:34AM 23 SUPPORTING REGULATIONS AND OTHER THINGS THAT CONTRIBUTE TO  
10:34AM 24 DRAFTING ONE OF THESE STANDARD OPERATING PROCEDURES?

10:34AM 25 A. YES.

10:34AM 1 Q. AND SOME OF THEM ARE THESE CMS REGULATIONS THAT WE TALKED  
10:34AM 2 ABOUT SOME OF THEM BEFORE; RIGHT?

10:34AM 3 A. YES.

10:34AM 4 Q. AND THEN THERE'S -- DO YOU SEE AT 7.4 AND 7.5 THERE'S THE  
10:34AM 5 CLSI MATERIALS.

10:34AM 6 7.5 IS CLSI GUIDELINE GP 29?

10:35AM 7 A. YES.

10:35AM 8 Q. DO YOU SEE THAT?

10:35AM 9 OKAY. IF YOU COULD GO -- I THINK IT WOULD BE IN YOUR  
10:35AM 10 SECOND BINDER THAT WE GAVE YOU LAST WEEK, AND IT'S  
10:35AM 11 EXHIBIT 20418.

10:36AM 12 OKAY. SO ARE YOU LOOKING AT EXHIBIT 20418?

10:36AM 13 A. YES.

10:36AM 14 Q. OKAY. AND THIS IS A DOCUMENT FROM THE CLINICAL AND  
10:36AM 15 LABORATORY STANDARDS INSTITUTE.

10:36AM 16 DO YOU SEE THAT?

10:36AM 17 A. UH-HUH.

10:36AM 18 Q. THAT'S CLSI.

10:36AM 19 AND ARE YOU FAMILIAR WITH CLSI?

10:36AM 20 A. NO.

10:36AM 21 Q. AND ARE YOU FAMILIAR WITH AN AGENCY, EVEN IF YOU DON'T  
10:36AM 22 KNOW IT WAS CALLED CLSI, THAT FORMULATES AND RECOMMENDS  
10:36AM 23 GUIDELINES AND STANDARDS FOR CLINICAL LABORATORIES AROUND THE  
10:36AM 24 COUNTRY?

10:36AM 25 A. YES, VAGUELY.

10:36AM 1 Q. OKAY. BUT YOU DON'T KNOW WHETHER THAT IS CALLED CLSI, IT  
10:36AM 2 SOUNDS LIKE?  
10:36AM 3 A. CORRECT.  
10:36AM 4 Q. OKAY. AND HAVE YOU EVER SEEN, FROM WHATEVER AGENCY YOU  
10:36AM 5 MAY KNOW IT AS, THIS TYPE OF GUIDELINE THAT IS AN ASSESSMENT OF  
10:36AM 6 LABORATORY TESTS WHEN PROFICIENCY TESTING IS NOT AVAILABLE?  
10:36AM 7 A. CAN YOU REPEAT THAT QUESTION.  
10:36AM 8 Q. SURE.  
10:37AM 9 ARE YOU FAMILIAR WITH A GUIDELINE FROM AN OUTSIDE  
10:37AM 10 STANDARDS AGENCY RECOMMENDING HOW TO PERFORM PROFICIENCY  
10:37AM 11 TESTING WHEN NORMAL OR STANDARD PROFICIENCY TESTING IS NOT  
10:37AM 12 AVAILABLE?  
10:37AM 13 A. I WASN'T AWARE OF THAT AT MY TIME AT THERANOS.  
10:37AM 14 Q. YEAH. ARE YOU AWARE OF THE RECOMMENDATIONS IN THE CLSI  
10:37AM 15 GUIDELINE ABOUT SOMETHING CALLED THE MATRIX EFFECT?  
10:37AM 16 A. YES.  
10:37AM 17 Q. OKAY. YOU UNDERSTAND THAT'S AN ISSUE WHERE SOMETIMES A  
10:37AM 18 PROFICIENCY TESTING MATERIAL MIGHT HAVE DIFFERENT PROPERTIES  
10:37AM 19 THAN HUMAN BLOOD?  
10:37AM 20 A. CORRECT.  
10:37AM 21 Q. AND THAT MIGHT AFFECT THE RESULTS OF THE TEST?  
10:37AM 22 A. CORRECT.  
10:37AM 23 Q. RIGHT. DO YOU UNDERSTAND THAT'S ONE OF THE REASONS WHY  
10:37AM 24 ALTERNATIVE ASSESSMENT PROTOCOL, OR AAP, IS NECESSARY FOR A  
10:37AM 25 CERTAIN SITUATION WHEN YOU HAVE MACHINES THAT DON'T HAVE PEER



10:37AM 1 GROUPS AROUND THE COUNTRY?

10:37AM 2 A. I DIDN'T KNOW THAT AT THE TIME.

10:37AM 3 Q. YOU DIDN'T KNOW THAT ONE WAY OR THE OTHER?

10:38AM 4 A. YEAH.

10:38AM 5 Q. SO YOU'RE NOT AN EXPERT IN THE MATRIX EFFECTS OR SOMETHING  
10:38AM 6 LIKE THAT?

10:38AM 7 A. NO.

10:38AM 8 Q. AND I'M ASSUMING THAT'S WHY YOU DIDN'T GET INVOLVED AT  
10:38AM 9 THERANOS IN FORMULATING THE AAP POLICIES OR ANYTHING LIKE THAT?

10:38AM 10 A. CORRECT.

10:38AM 11 Q. OKAY. AND ARE YOU FAMILIAR WITH THE CLSI RECOMMENDATIONS  
10:38AM 12 ABOUT HOW TO GO ABOUT PERFORMING PROFICIENCY TESTING FOR  
10:38AM 13 ALTERNATIVE ASSESSMENT SITUATIONS?

10:38AM 14 A. NO.

10:38AM 15 Q. OKAY. IF YOU COULD TURN IN YOUR BINDER, AND I THINK IT  
10:38AM 16 WOULD BE THE FIRST BINDER THAT THE GOVERNMENT GAVE YOU,  
10:38AM 17 EXHIBIT 1589.

10:39AM 18 OH, I'M SORRY. COULD WE JUST GO BACK TO THE ONE WE WERE  
10:39AM 19 JUST LOOKING AT. I HAVE ONE MORE QUESTION ABOUT THAT.

10:39AM 20 THIS IS 20418.

10:39AM 21 A. WAIT. THE PRIOR ONE IN THE DEFENSE BINDER?

10:39AM 22 Q. RIGHT. THE ONE WE WERE JUST REFERRING TO, EXHIBIT 20418.  
10:39AM 23 I'M SORRY ABOUT THAT.

10:39AM 24 DO YOU SEE THAT THE CLINICAL AND LABORATORY STANDARDS  
10:39AM 25 INSTITUTE DOCUMENT THAT IS EXHIBIT 20418 ACTUALLY IS TITLED

10:39AM 1

GP 29-A2.

10:39AM 2

DO YOU SEE THAT?

10:39AM 3

A. YES.

10:39AM 4

Q. OKAY. AND THEN IF YOU GO TO EXHIBIT 9939 IN THE DEFENSE

10:40AM 5

BINDER. THAT IS THE STANDARD OPERATING PROCEDURE THAT WE WERE

10:40AM 6

LOOKING AT A FEW MINUTES AGO.

10:40AM 7

AND YOU GO TO PAGE 6 OF 8 YOU SEE THE REFERENCE TO CLSI

10:40AM 8

GUIDELINE GP 29?

10:40AM 9

A. YES.

10:40AM 10

Q. OKAY. ALL RIGHT.

10:40AM 11

LET'S NOW GO TO EXHIBIT 1589.

10:40AM 12

A. THAT'S IN THE DEFENSE OR THE GOVERNMENT'S?

10:40AM 13

Q. IT SHOULD BE IN THE GOVERNMENT'S BINDER.

10:40AM 14

OKAY. DO YOU HAVE THAT?

10:40AM 15

A. YES.

10:40AM 16

Q. AND THIS IS AN EXHIBIT THAT YOU SAW DURING YOUR DIRECT

10:40AM 17

EXAMINATION?

10:40AM 18

A. YES.

10:40AM 19

Q. AND IF YOU GO TO THE EARLIEST EMAIL IN TIME, WHICH IS ON

10:41AM 20

PAGE 2 OF THE EXHIBIT, YOU SEE THAT THERE'S AN EMAIL FROM

10:41AM 21

DR. PANDORI TO MR. GEE, YOURSELF, AND THEN SOME OF YOUR

10:41AM 22

COLLEAGUES.

10:41AM 23

DO YOU SEE THAT?

10:41AM 24

A. CORRECT.

10:41AM 25

Q. AND IT'S DATED FEBRUARY 24TH, 2014.

10:41AM 1 SO THIS WAS JUST A FEW DAYS AFTER THAT PROFICIENCY TESTING

10:41AM 2 ISSUE THAT CAME UP WITH THE NEW YORK STATE SAMPLES?

10:41AM 3 A. CORRECT.

10:41AM 4 Q. AND THAT WHAT DR. PANDORI IS SAYING THERE IS THAT THERE IS

10:41AM 5 GOING TO BE A NEW QUALITY MEASURE FOR EDISON TESTS.

10:41AM 6 DO YOU SEE THAT?

10:41AM 7 A. YES.

10:41AM 8 Q. AND IT'S A ONCE PER WEEK WHERE THEY ARE GOING TO TAKE

10:41AM 9 VENIPUNCTURE SAMPLES AND FINGERSTICK SAMPLES AND RUN THEM ON

10:41AM 10 THE COMMERCIAL MACHINES, OR THE PREDICATES, AND THE EDISON

10:41AM 11 MACHINES, AND LOOK AT HOW THOSE COMPARE?

10:41AM 12 A. CORRECT.

10:41AM 13 Q. AND THAT'S THE PLAN; RIGHT?

10:41AM 14 A. YES.

10:41AM 15 Q. AND THAT THIS PARTICULAR ONE RELATES TO FOUR ASSAYS:

10:42AM 16 VITAMIN D, TPSA, FT4, AND TSH?

10:42AM 17 A. CORRECT.

10:42AM 18 Q. AND I THINK ON DIRECT YOU WERE TALKING TO MR. BOSTIC ABOUT

10:42AM 19 AN EMAIL FROM MR. BALWANI, AND THAT STARTS ON THE BOTTOM OF

10:42AM 20 PAGE 1 AND CONTINUES TO PAGE 2, AND THAT'S THE FEBRUARY 25TH,

10:42AM 21 2014 EMAIL FROM MR. BALWANI.

10:42AM 22 DO YOU SEE THAT?

10:42AM 23 A. YES.

10:42AM 24 Q. AND IF YOU GO IN THE MIDDLE OF THE PARAGRAPH ON THE FIRST

10:42AM 25 PART OF THAT EMAIL, IT SAYS, "WE HAVE TREMENDOUS AMOUNT OF DATA

10:42AM 1 ON EDISONS AND OUR ELISA'S OVER LAST 6 PLUS YEARS TO KNOW THEY  
10:42AM 2 PERFORM EXTREMELY WELL AND FOR MANY ASSAYS, BETTER THAN  
10:42AM 3 PREDICATE METHODS."

10:42AM 4 DO YOU SEE THAT?

10:42AM 5 A. YES.

10:42AM 6 Q. AND NOW, YOU WEREN'T AT THE COMPANY FOR THAT LONG GOING  
10:42AM 7 BACK 6 PLUS YEARS; RIGHT?

10:42AM 8 A. NO.

10:42AM 9 Q. SO YOU WOULDN'T KNOW WHAT DATA HE'S REALLY REFERRING TO AT  
10:42AM 10 THAT POINT; RIGHT?

10:42AM 11 A. NO.

10:42AM 12 Q. SO, FOR EXAMPLE, IF MR. BALWANI WAS REFERRING TO THOSE  
10:42AM 13 FOUR BINDERS I SHOWED YOU BEFORE OF ASSAY DEVELOPMENT REPORTS  
10:43AM 14 FOR ALL OF THE SMALL SAMPLE ASSAYS, YOU WOULDN'T KNOW ONE WAY  
10:43AM 15 OR THE OTHER IF THAT'S WHAT HE WAS REFERRING TO?

10:43AM 16 A. I KNEW OF SOME OF THEM, BUT NOT ALL OF THEM.

10:43AM 17 Q. OKAY. BECAUSE YOU WEREN'T INVOLVED IN DEVELOPING ALL OF  
10:43AM 18 THOSE 161-PLUS SMALL SAMPLE ASSAYS?

10:43AM 19 A. CORRECT.

10:43AM 20 Q. SO YOU WOULDN'T BE IN A POSITION TO JUDGE WHETHER  
10:43AM 21 MR. BALWANI WAS CORRECT OR NOT ABOUT HAVING SEEN ALL OF THAT  
10:43AM 22 DATA FOR SIX-PLUS YEARS AND BEING CONFIDENT IN IT; RIGHT?

10:43AM 23 A. NOT IN THE PAST. ONLY AT THE TIME THAT I WORKED THERE.

10:43AM 24 Q. OKAY. AND THEN IF YOU GO TO THE NEXT PAGE, PAGE 2, AND  
10:43AM 25 IT'S THE FIRST FULL PARAGRAPH THERE THAT I WANT TO HIGHLIGHT

10:43AM 1 FOR YOU.

10:43AM 2 IT SAYS, "HOWEVER, MOST IMPORTANT TO ME IS THE POINT THAT  
10:43AM 3 NEEDS TO BE COMMUNICATED AS TO WHY WE ARE DOING THIS."

10:43AM 4 AND YOU UNDERSTAND THAT MR. BALWANI IS REFERRING TO THIS  
10:43AM 5 NEW QUALITY CONTROL MEASURE THAT DR. PANDORI WAS EXPLAINING IN  
10:43AM 6 THE EMAIL ON THE BOTTOM; RIGHT?

10:43AM 7 A. CORRECT.

10:43AM 8 Q. AND THEN IF YOU GO SORT OF IN THE MIDDLE OF THAT PARAGRAPH  
10:44AM 9 THERE'S A SENTENCE THAT SAYS, "I AM ALREADY EXTREMELY IRRITATED  
10:44AM 10 BY UNPLANNED RUNS OF PT SAMPLES AROUND VITAMIN D AND OTHERS AND  
10:44AM 11 HOW IT WAS HANDLED AND COMMUNICATED WHEN NO ONE FROM EDISON  
10:44AM 12 TEAM WAS INCLUDED," AND THEN IT GOES ON.

10:44AM 13 DO YOU SEE THAT?

10:44AM 14 A. UH-HUH.

10:44AM 15 Q. SO YOU WOULD AGREE WITH ME, RIGHT, THAT IF THE PROCEDURE  
10:44AM 16 THAT -- WITH THE NEW YORK STATE SAMPLES, AND YOU TALKED ABOUT  
10:44AM 17 HOW THOSE RESULTS DIDN'T LOOK RIGHT TO YOU; RIGHT?

10:44AM 18 A. YES.

10:44AM 19 Q. YOU WOULD AGREE WITH ME THAT IF THAT EXPERIMENT WAS NOT  
10:44AM 20 CONSISTENT WITH THERANOS'S STANDARD OPERATING PROCEDURE, THAT  
10:44AM 21 WOULD IN EFFECT BE AN UNPLANNED RUN OF PROFICIENCY TESTING  
10:44AM 22 SAMPLES; CORRECT?

10:44AM 23 A. UM, I DON'T KNOW. I DON'T KNOW BECAUSE I WASN'T AWARE OF  
10:44AM 24 THE STANDARD OPERATING PROCEDURE.

10:44AM 25 Q. OKAY. BUT MY QUESTION TO YOU IS THAT NOW THAT WE HAVE ALL

10:44AM 1 LOOKED AT THE STANDARD OPERATING PROCEDURE TOGETHER, AND IF  
10:45AM 2 IT'S TRUE THAT THE NEW YORK STATE SAMPLE'S EXPERIMENT WAS NOT  
10:45AM 3 CONSISTENT WITH THE STANDARD OPERATING PROCEDURE, THEN THAT  
10:45AM 4 WOULD BE SOMETHING OUTSIDE OF THERANOS'S STANDARD OPERATING  
10:45AM 5 PROCEDURE, AND, THEREFORE, AN UNPLANNED RUN OF PT SAMPLES; IS  
10:45AM 6 THAT FAIR?

10:45AM 7 A. I THINK SO, YEAH.

10:45AM 8 Q. OKAY. AND IF YOU GO UP TO THE TOP EMAIL, OR I GUESS IT'S  
10:45AM 9 THE SECOND EMAIL ON THE PAGE FROM MR. BALWANI.

10:45AM 10 DO YOU SEE MR. BALWANI AT 2:19 P.M. EMAILS A GROUP OF  
10:45AM 11 PEOPLE AGAIN, INCLUDING DR. ROSENDORFF, AND DR. PANDORI, AND  
10:45AM 12 YOURSELF, AND OTHER COLLEAGUES AND SCIENTISTS, AND HE SAYS,  
10:45AM 13 "THIS IS WHAT WE DID FOR ALL OF OUR VALIDATION WORK WE DID FOR  
10:45AM 14 EACH OF THESE ASSAYS WHEN WE BROUGHT THEM FOR CLIA."

10:45AM 15 DO YOU SEE THAT?

10:45AM 16 A. YES.

10:45AM 17 Q. AND IF YOU GO TO THE LAST SENTENCE MR. BALWANI WRITES, "WE  
10:46AM 18 CAN THEN DECIDE HOW OFTEN WE NEED TO DO THIS. THIS IS  
10:46AM 19 SOMETHING THAT YOU AND MARK CAN DECIDE AND THEN LONGLY CAN  
10:46AM 20 IMPLEMENT."

10:46AM 21 DO YOU SEE THAT?

10:46AM 22 A. YES.

10:46AM 23 Q. AND SO HE WAS REFERRING TO, BY YOU AND MARK, HE'S  
10:46AM 24 REFERRING TO DR. ROSENDORFF AND DR. PANDORI?

10:46AM 25 A. CORRECT.

10:46AM 1 Q. AND SO YOU UNDERSTAND THAT MR. BALWANI WAS COMMUNICATING  
10:46AM 2 IF THOSE TWO DOCTORS DECIDE TO DO IT THIS WAY, THEY CAN DO  
10:46AM 3 THAT, AND THE QUALITY CONTROL MANAGER CAN IMPLEMENT THE  
10:46AM 4 PROCESS?

10:46AM 5 A. CORRECT.

10:46AM 6 Q. OKAY. AND THE DAY BEFORE THIS EMAIL, DO YOU RECALL THAT  
10:46AM 7 MR. GEE, THE QUALITY CONTROL MANAGER, ACTUALLY SENT STANDARD  
10:46AM 8 OPERATING PROCEDURE FOR THIS IN-HOUSE QUALITY STUDY?

10:46AM 9 A. I DON'T REMEMBER.

10:46AM 10 Q. OKAY. IF YOU COULD TAKE A LOOK IN YOUR BINDER AT  
10:46AM 11 EXHIBIT 20225, AND THAT SHOULD BE IN THE SECOND OF THE TWO  
10:47AM 12 BINDERS I GAVE YOU LAST WEEK?

10:47AM 13 A. 2?

10:47AM 14 Q. 20225. OKAY. DO YOU HAVE THAT IN FRONT OF YOU?

10:47AM 15 A. YES.

10:47AM 16 Q. AND DO YOU SEE IT'S AN EMAIL FROM -- ON THE TOP EMAIL IT'S  
10:47AM 17 FROM MR. GEE TO MR. BALWANI, DR. PANDORI, AND THEN THERE'S A  
10:47AM 18 COPY TO A NUMBER OF PEOPLE, INCLUDING YOURSELF?

10:47AM 19 A. YES.

10:47AM 20 Q. OKAY.

10:47AM 21 YOUR HONOR, WE OFFER EXHIBIT 20225.

10:47AM 22 MR. BOSTIC: NO OBJECTION.

10:47AM 23 MR. COOPERSMITH: IF WE CAN PUT THAT UP ON THE  
10:48AM 24 SCREEN.

10:48AM 25 THE COURT: AS SOON AS I ADMIT IT WE CAN DO THAT.

10:48AM 1 MR. COOPERSMITH: SORRY. WE CAN TAKE IT DOWN.

10:48AM 2 THE COURT: ARE YOU ASKING THAT THE ENTIRETY? IT

10:48AM 3 LOOKS LIKE SEVEN PAGES.

10:48AM 4 MR. COOPERSMITH: YES, YOUR HONOR, THE EMAIL WITH

10:48AM 5 THE ATTACHMENT, A TOTAL OF SEVEN PAGES.

10:48AM 6 THE COURT: ALL RIGHT.

10:48AM 7 MR. BOSTIC, ANY OBJECTION?

10:48AM 8 MR. BOSTIC: NO OBJECTION, YOUR HONOR. THANK YOU.

10:48AM 9 THE COURT: THANK YOU. IT MAY BE ADMITTED, AND IT

10:48AM 10 MAY BE PUBLISHED.

10:48AM 11 MR. COOPERSMITH: THANK YOU, YOUR HONOR.

10:48AM 12 (DEFENDANT'S EXHIBIT 20225 WAS RECEIVED IN EVIDENCE.)

10:48AM 13 BY MR. COOPERSMITH:

10:48AM 14 Q. OKAY. LOOKING AT EXHIBIT 20225 THAT'S NOW ON THE SCREEN.

10:48AM 15 DO YOU SEE MR. GEE WROTE, "SUNNY/ALL:

10:48AM 16 "ATTACHED IS THE STUDY TO COMPARE PREDICATE VERSUS

10:48AM 17 EDISON'S RESULTS FOR TSH, VITAMIN D, AND FT4."

10:48AM 18 DO YOU SEE THAT?

10:48AM 19 A. YES.

10:48AM 20 Q. AND IT SAYS, "MARK AND DANIEL HAS SIGNED OFF ON THE

10:48AM 21 STUDY."

10:48AM 22 A. CORRECT?

10:49AM 23 Q. DO YOU UNDERSTAND THAT TO BE MARK PANDORI AND

10:49AM 24 DANIEL YOUNG?

10:49AM 25 A. CORRECT.



10:49AM 1 Q. AND IT SAYS, "ADAM AND HODA HAS REVIEWED THE DRAFT AND  
10:49AM 2 PROVIDED THEIR COMMENTS."

10:49AM 3 DO YOU UNDERSTAND THAT ADAM IS DR. ROSENDORFF?

10:49AM 4 A. CORRECT.

10:49AM 5 Q. AND WHO WAS HODA?

10:49AM 6 A. HODA WAS ONE OF THE CLINICAL LAB SCIENTISTS IN THE  
10:49AM 7 CLINICAL LAB.

10:49AM 8 Q. AND ONE OF THE PEOPLE WHO WOULD BE AUTHORIZED TO RELEASE  
10:49AM 9 PATIENT RESULTS?

10:49AM 10 A. YES.

10:49AM 11 Q. AND WHO TOOK THE EXAM UNDER CALIFORNIA LAW?

10:49AM 12 A. YES.

10:49AM 13 Q. OKAY. AND THEN IT SAYS, "SHARADA AND SURAJ, PLEASE  
10:49AM 14 COMMENT."

10:49AM 15 DO YOU SEE THAT?

10:49AM 16 A. YES.

10:49AM 17 Q. AND DO YOU UNDERSTAND THAT HE WAS ASKING FOR ADDITIONAL  
10:49AM 18 COMMENTS FROM TWO OTHER PH.D.'S WHO WORKED AT THERANOS?

10:49AM 19 A. CORRECT.

10:49AM 20 Q. AND IT GOES ON TO SAY, "THE STUDY IS TO START MARCH 10TH  
10:49AM 21 AND CONTINUE FOR FOUR WEEKS. DATA ANALYSIS WILL FOLLOW AND  
10:49AM 22 DETERMINE NEXT STEPS."

10:49AM 23 SO THIS WAS MR. GEE ACTUALLY TRYING TO IMPLEMENT THE  
10:49AM 24 IN-HOUSE QUALITY CONTROL STUDY; RIGHT?

10:49AM 25 A. YES.

10:49AM 1 Q. OR ACTUALLY THE PROFICIENCY TESTING STUDY?

10:50AM 2 A. YES.

10:50AM 3 Q. AND THEN IF YOU GO TO THE ATTACHMENT AND YOU SEE IT'S NOT

10:50AM 4 SIGNED AT THIS POINT, BUT THAT'S THE DRAFT THAT MR. GEE IS

10:50AM 5 CIRCULATING?

10:50AM 6 A. CORRECT.

10:50AM 7 Q. IF YOU START OUT ON PAGE 5 OF THE EXHIBIT, AND YOU SEE

10:50AM 8 THERE'S A SERIES OF REFERENCES, AND ONE OF THEM IS TO -- IN

10:50AM 9 FACT, IT'S THE FIRST REFERENCE "CL SOP-00020 CURRENT REV.

10:50AM 10 PROFICIENCY TESTING FOR THERANOS LAB-DEVELOPED TESTS: EDISON

10:50AM 11 3.5."

10:50AM 12 DO YOU SEE THAT?

10:50AM 13 A. CORRECT.

10:50AM 14 Q. AND IF YOU QUICKLY LOOK AT EXHIBIT 9939.

10:50AM 15 A. YES.

10:51AM 16 Q. AND DO YOU AGREE WITH ME THAT THAT REFERENCE IS TO THAT

10:51AM 17 EXHIBIT THAT WE LOOKED AT JUST BEFORE THE BREAK AND JUST AFTER

10:51AM 18 THE BREAK THAT DEALS WITH PROFICIENCY TESTING FOR THERANOS

10:51AM 19 EDISON DEVICES?

10:51AM 20 A. YES.

10:51AM 21 Q. AND SO THAT'S WHAT MR. GEE WAS REFERENCING?

10:51AM 22 A. YES.

10:51AM 23 Q. OKAY. AND YOU RECEIVED THIS EMAIL AND ATTACHMENT FROM

10:51AM 24 MR. GEE; RIGHT?

10:51AM 25 A. YES.

10:51AM 1 Q. AND DID YOU TAKE TIME TO LOOK AT THE REFERENCE DOCUMENTS?

10:51AM 2 A. I CAN'T REMEMBER AT THAT TIME, BUT I DID RUN THIS

10:51AM 3 PROFICIENCY TESTING.

10:51AM 4 Q. OKAY. BUT YOU DON'T REMEMBER WHETHER YOU LOOKED AT THE

10:51AM 5 REFERENCE SOP'S?

10:51AM 6 A. I'VE LOOKED AT NUMEROUS OF THEM, BUT I DON'T REMEMBER.

10:51AM 7 Q. OKAY. AND IF YOU GO DOWN TO PROCEDURE DOWN THE PAGE.

10:51AM 8 A. YES.

10:51AM 9 Q. YOU SEE THERE'S 1.2. IT SAYS, PREDICATE METHOD, AND THEN

10:51AM 10 IT DESCRIBES WHICH INSTRUMENTS ARE GOING TO BE RUN WITH

10:51AM 11 PARTICULAR ASSAYS?

10:51AM 12 A. YES.

10:51AM 13 Q. FOR EXAMPLE, FT4 WOULD BE RUN, THAT SAMPLE WOULD BE RUN ON

10:52AM 14 A SIEMENS IMMULITE 2000?

10:52AM 15 A. YES.

10:52AM 16 Q. AND THEN THE VITAMIN D WOULD BE RUN ON THE DIASORIN

10:52AM 17 LIAISON?

10:52AM 18 A. RIGHT.

10:52AM 19 Q. THAT'S A COMMERCIAL MACHINE?

10:52AM 20 A. YES.

10:52AM 21 Q. AND THERANOS DESCRIBES THAT THOSE SAME ASSAYS WOULD BE RUN

10:52AM 22 ON EDISON 3.5'S.

10:52AM 23 DO YOU SEE THAT?

10:52AM 24 A. YES.

10:52AM 25 Q. AND THAT'S SECTION 1.3.

10:52AM 1 AND THEN DO YOU UNDERSTAND THE PURPOSE OF THIS, AS WE  
10:52AM 2 TALKED ABOUT BEFORE, WAS TO SIMPLY COMPARE THE BLOOD SAMPLES  
10:52AM 3 THAT WERE TAKEN FROM PEOPLE AT THERANOS, EMPLOYEES, AND THEN DO  
10:52AM 4 THIS COMPARISON TO SEE IF IT CHECKED OUT THERANOS RESULTS  
10:52AM 5 VERSUS COMMERCIAL RESULTS?

10:52AM 6 A. CORRECT.

10:52AM 7 Q. OKAY. AND THEN IF YOU LOOK AT ACCEPTANCE CRITERIA, WHICH  
10:52AM 8 IS NEAR THE BOTTOM OF THE PAGE, DO YOU SEE IT SAYS QUALITY  
10:52AM 9 CONTROLS MUST ALL PASS?

10:52AM 10 A. CORRECT.

10:52AM 11 Q. OKAY. AND I THINK YOU SAID A MINUTE AGO, YOU WERE  
10:53AM 12 ACTUALLY INVOLVED IN HELPING TO RUN SOME OF THOSE EXPERIMENTS;  
10:53AM 13 RIGHT?

10:53AM 14 A. CORRECT. WE RAN THESE AS THE PROTOCOL WENT, AND WE HAD  
10:53AM 15 TWO OF THE ASSAYS FAIL, SO WE HAD TO PULL THEM FROM PATIENT  
10:53AM 16 TESTING.

10:53AM 17 Q. OKAY. BUT THAT WAS THE POINT OF THE WHOLE TESTING; RIGHT?

10:53AM 18 A. YES.

10:53AM 19 Q. AND IS THAT IF IT DIDN'T PASS, YOU WOULD PULL IT FROM  
10:53AM 20 PATIENT TESTING?

10:53AM 21 A. YES.

10:53AM 22 Q. AND IN TERMS OF THAT, YOU CAN'T SAY, SITTING HERE TODAY,  
10:53AM 23 THAT YOU WERE AWARE OF A SINGLE PATIENT RESULT THAT WENT OUT OF  
10:53AM 24 THERANOS THAT ISN'T ACCURATE; ISN'T THAT RIGHT?

10:53AM 25 A. CORRECT.

10:53AM 1 Q. LET'S TAKE A LOOK, I THINK IT SHOULD BE IN THE SAME  
10:53AM 2 BINDER, AT EXHIBIT 20046.

10:54AM 3 DO YOU HAVE THAT?

10:54AM 4 A. YES.

10:54AM 5 Q. AND EXHIBIT 20046 IS AN EMAIL STRING. IF YOU LOOK AT THE  
10:54AM 6 TOP, IT'S FROM LAGLY GEE?

10:54AM 7 A. YES.

10:54AM 8 Q. AND IT'S TO A NUMBER OF PEOPLE, INCLUDING YOU; RIGHT?

10:54AM 9 A. YES.

10:54AM 10 Q. AND IT WAS AN EMAIL STRING THAT WAS CIRCULATED AS PART OF  
10:54AM 11 THE WORK AT THERANOS AT THAT TIME, MARCH 31ST, 2014?

10:54AM 12 A. CORRECT.

10:54AM 13 MR. COOPERSMITH: YOUR HONOR, WE OFFER  
10:54AM 14 EXHIBIT 20046.

10:54AM 15 MR. BOSTIC: NO OBJECTION.

10:54AM 16 THE COURT: IT'S ADMITTED, AND IT MAY BE PUBLISHED.

10:55AM 17 (DEFENDANT'S EXHIBIT 20046 WAS RECEIVED IN EVIDENCE.)

10:55AM 18 BY MR. COOPERSMITH:

10:55AM 19 Q. LET'S TAKE A LOOK AT THE BOTTOM EMAIL, THE EARLIEST IN  
10:55AM 20 TIME EMAIL, WHICH IS ON PAGES 2 AND 3, AND THAT IS MR. GEE  
10:55AM 21 REPORTING "ALL,

10:55AM 22 "SEE ATTACHED FOR WEEK 2 VITAMIN D RESULTS."

10:55AM 23 DO YOU SEE THAT?

10:55AM 24 A. YES.

10:55AM 25 Q. BUT NOW THIS PROCESS THAT WE'RE TALKING ABOUT, THIS

10:55AM 1 IN-HOUSE PROFICIENCY TESTING STUDY IS ACTUALLY ONGOING AND IN

10:55AM 2 THIS CASE MR. GEE IS REPORTING SOME RESULTS?

10:55AM 3 A. CORRECT.

10:55AM 4 Q. AND IN THIS CASE FOR VITAMIN D?

10:55AM 5 A. YES.

10:55AM 6 Q. AND THEN IF YOU GO RIGHT ABOVE THAT MR. BALWANI WRITES ON

10:55AM 7 FEBRUARY -- I'M SORRY, MARCH 19TH, AND HE WRITES TO MR. GEE,

10:55AM 8 AND DR. ROSENDORFF, DR. PANDORI, DR. YOUNG, DR. SAKSENA,

10:55AM 9 DR. SIVARAMAN, AND HODA ALAMDAR, WHO WAS A CLINICAL LAB

10:55AM 10 SCIENTIST; RIGHT?

10:55AM 11 A. CORRECT.

10:55AM 12 Q. AND HE WRITES, "FOR NEXT RUN, I WOULD LIKE TO NARROW DOWN

10:55AM 13 WHY 1 SAMPLE IS OFF IN THIS 5 RUNS."

10:56AM 14 RIGHT?

10:56AM 15 A. YES.

10:56AM 16 Q. AND DO YOU UNDERSTAND THAT MR. BALWANI WAS CONCERNED

10:56AM 17 BECAUSE ONE SAMPLE SEEMED TO BE OFF AND HE WANTED TO UNDERSTAND

10:56AM 18 WHY THAT WAS THE CASE; RIGHT?

10:56AM 19 A. YES.

10:56AM 20 Q. SO IN THIS INSTANCE MR. BALWANI WAS NOT SAYING, WELL, FOUR

10:56AM 21 OUT OF FIVE IS GOOD ENOUGH, LET'S JUST MOVE FORWARD?

10:56AM 22 A. YEAH.

10:56AM 23 Q. AND THEN HE GOES ON. "LET'S INCREASE NUMBER OF SAMPLE

10:56AM 24 FROM 5 TO 10 OR 20 SO SAMPLE SIZE IS MORE MEANINGFUL. 5 IS TOO

10:56AM 25 SMALL."

10:56AM 1 DO YOU SEE THAT?

10:56AM 2 A. YES.

10:56AM 3 Q. AND DO YOU SEE THAT MR. BALWANI ACTUALLY WANTED TO GET  
10:56AM 4 MORE DATA, TO HAVE MORE MEANINGFUL DATA TO ASSESS THE ISSUE.

10:56AM 5 DO YOU SEE THAT?

10:56AM 6 A. YES.

10:56AM 7 Q. AND THEN HE GOES ON TO SAY, "ALSO, LET'S COLLECT 2  
10:56AM 8 FINGERSTICKS AND RUN THEM ON 2 DEVICES AS FOLLOWS," AND THEN HE  
10:56AM 9 HAS THE LIST; RIGHT?

10:56AM 10 A. RIGHT.

10:56AM 11 Q. AND THEN FINALLY HE WRITES, MR. BALWANI, "THIS WILL NARROW  
10:56AM 12 DOWN PROBLEM EITHER WITH CTN OR DEVICE IF THE RECOVERY IS TOO  
10:56AM 13 HIGH. WE NEED TO SOLVE THIS."

10:57AM 14 RIGHT?

10:57AM 15 A. YES.

10:57AM 16 Q. AND IF YOU GO UP THE PAGE, THE NEXT EMAIL MR. GEE WRITES  
10:57AM 17 THAT HE WILL MODIFY THE STUDY PLAN TO ACCOMMODATE YOUR  
10:57AM 18 SUGGESTIONS?

10:57AM 19 A. YES.

10:57AM 20 Q. BUT AS YOU SAID BEFORE, MR. BALWANI IS NOT THE SCIENTIST  
10:57AM 21 IN CHARGE OF THE LAB; RIGHT?

10:57AM 22 A. NO.

10:57AM 23 Q. SO IF YOU LOOK AT THE EMAIL RIGHT ABOVE THAT, MR. BALWANI  
10:57AM 24 SAYS, "ONLY IF THEY MAKE SENSE. YOU GUYS CAN DECIDE BUT SEEMS  
10:57AM 25 LIKE THIS WILL GIVE US MORE DATA."

10:57AM 1 DO YOU SEE THAT?

10:57AM 2 A. YEAH.

10:57AM 3 Q. AND HE'S GIVING AN OPPORTUNITY FOR THE VARIOUS SCIENTISTS  
10:57AM 4 ON THE EMAIL STRING TO WEIGH IN IF THEY HAVE A DIFFERENCE IN  
10:57AM 5 HOW TO GO ABOUT THIS; RIGHT?

10:57AM 6 A. YES.

10:57AM 7 Q. OKAY. AND THEN IF YOU GO TO THE EMAIL THAT STARTS ON THE  
10:57AM 8 VERY BOTTOM OF PAGE 1 FROM DR. PANDORI AND GOES ON TO THE TOP  
10:57AM 9 OF PAGE 2, THAT'S THE MARCH 19TH, 6:59 P.M.

10:58AM 10 DR. PANDORI WRITES, "I DO LIKE THE IDEA OF RUNNING ON  
10:58AM 11 MULTIPLE DEVICES."

10:58AM 12 AND THEN HE GOES ON TO SAY, "INCREASING THE SAMPLE SIZE TO  
10:58AM 13 10 OR 20 AND RUNNING TWO DEVICES IS MORE DIFFICULT THAN IT  
10:58AM 14 SEEMS, FOR THE REASON THAT WE PLAN TO ADD TSH OR FT4 TO THIS  
10:58AM 15 STUDY NEXT MONDAY, AND SO THAT WOULD MEAN EITHER 60 OR 120 RUNS  
10:58AM 16 ON THE EDISONS; THIS WOULD COMPLETELY OCCUPY EDISONS FOR ONE OR  
10:58AM 17 TWO DAYS, AND I'M CONCERNED THAT IT WILL INHIBIT PATIENT  
10:58AM 18 TURNAROUND TIMES."

10:58AM 19 DO YOU SEE DR. PANDORI WAS CONCERNED ABOUT RUNNING AS MANY  
10:58AM 20 SAMPLES AS MR. BALWANI WANTED TO BECAUSE HE THOUGHT IT WOULD  
10:58AM 21 INTERFERE WITH THE OTHER WORK THAT THE LAB WAS DOING; RIGHT?

10:58AM 22 A. CORRECT.

10:58AM 23 Q. AND THAT WAS DR. PANDORI MAKING THAT OBSERVATION, NOT  
10:58AM 24 MR. BALWANI; RIGHT?

10:58AM 25 A. YES.



10:58AM 1 Q. OKAY. AND THEN MR. BALWANI IN THE EMAIL RIGHT ABOVE THAT  
10:58AM 2 SAYS, "AGREED. LET'S DO THIS FOR VITAMIN D THIS WAY AND OTHERS  
10:58AM 3 THE WAY ALREADY PLANNED."

10:59AM 4 SO HE'S DEFERRING TO DR. PANDORI IN THAT CASE?

10:59AM 5 A. YES.

10:59AM 6 Q. AND THEN IF YOU GO ABOVE THAT, DR. PANDORI THEN WRITES  
10:59AM 7 BACK AND HE SAYS, "OK, LONGLY, NOTE."

10:59AM 8 AND THEN HE SAYS, "ALSO, ALL,

10:59AM 9 "ATTACHED, IS AN INTERESTING PAPER I'VE FOUND ON THE TOPIC  
10:59AM 10 OF VARIABILITY OF VITAMIN D ASSAYS ON VARIOUS  
10:59AM 11 METHODS/EQUIPMENT. IT MAY BE USEFUL IN REGARDS TO OUR EFFORT  
10:59AM 12 TO ESTABLISH FAIR RANGES OF ACCEPTABILITY FOR AAP THIS ANALYTE,  
10:59AM 13 WHICH SEEMS NOTORIOUS FOR VARIABILITY ON EVEN FDA APPROVED  
10:59AM 14 TESTS."

10:59AM 15 DO YOU SEE THAT?

10:59AM 16 A. YES.

10:59AM 17 Q. AND SO YOUR UNDERSTANDING WAS THAT DR. PANDORI WAS MAKING  
10:59AM 18 AN OBSERVATION THAT VITAMIN D WAS A NOTORIOUSLY VARIABLE ASSAY?

10:59AM 19 A. CORRECT.

10:59AM 20 Q. AND DID YOU LOOK AT THE PAPER THAT DR. PANDORI ATTACHED?

10:59AM 21 A. IT WASN'T SENT TO ME.

10:59AM 22 Q. YOU NEVER RECEIVED IT?

10:59AM 23 A. YES.

10:59AM 24 Q. AND DID YOU GO SEEK IT OUT?

10:59AM 25 A. NO.

10:59AM 1 Q. AT ANY TIME?

10:59AM 2 A. I DON'T KNOW.

10:59AM 3 Q. LIKE, FOR EXAMPLE, IN THE PREPARATION SESSION THAT YOU DID

11:00AM 4 WITH THE GOVERNMENT PROSECUTORS, DID THEY EVER SHOW YOU THAT

11:00AM 5 STUDY?

11:00AM 6 A. NO.

11:00AM 7 Q. OKAY. DID THEY EVER SHOW YOU THIS EMAIL AT ALL?

11:00AM 8 A. NO.

11:00AM 9 Q. IF YOU GO TO THE EMAIL RIGHT ABOVE THAT, MR. BALWANI SAYS,

11:00AM 10 "ABSOLUTELY, WE HAVE KNOW THIS," OR KNOWN THIS, "AND BOTH FDA

11:00AM 11 AND CLIA HAVE MENTIONED THIS ALONG WITH LAB DIRECTORS WHO SAID

11:00AM 12 THEY USUALLY HAVE 40 PERCENT VARIABLY IN VITAMIN D. UCSF HAD

11:00AM 13 COMMENTED ON THIS ALSO."

11:00AM 14 DO YOU SEE THAT?

11:00AM 15 A. YES.

11:00AM 16 Q. AND IT SOUNDS LIKE YOU'RE NOT IN A POSITION TO OPINE ON

11:00AM 17 THAT ONE WAY OR THE OTHER; RIGHT?

11:00AM 18 A. CORRECT.

11:00AM 19 Q. AND THEN IF YOU GO TO THE TOP EMAIL FROM MR. GEE HE SAYS,

11:00AM 20 "BASED ON THESE EMAILS, I'M INCREASING THE NUMBER OF SAMPLES

11:00AM 21 FOR VITAMIN D TESTING TO N EQUALS 10 FOR NEXT TWO WEEKS. ALL

11:00AM 22 ASSAYS WILL BE DONE AT N EQUALS 5 (FT4 AND TSH)."

11:00AM 23 DO YOU SEE THAT?

11:00AM 24 A. YES.

11:00AM 25 Q. SO THAT'S MR. GEE IMPLEMENTING WHAT THE SCIENTISTS SAID

11:01AM 1 MR. BALWANI AND WHAT THE WHOLE GROUP DECIDED; RIGHT?

11:01AM 2 A. CORRECT.

11:01AM 3 Q. AND HE COPIED YOU ON THAT?

11:01AM 4 A. YES.

11:01AM 5 Q. AND IS THAT SO YOU COULD HELP IN THAT IMPLEMENTATION?

11:01AM 6 A. CORRECT.

11:01AM 7 Q. CAN YOU TAKE A LOOK AT EXHIBIT 3526.

11:01AM 8 OKAY. DO YOU SEE THAT EXHIBIT 3526 IS AN EMAIL FROM  
11:01AM 9 MARCH 14TH, 2014?

11:01AM 10 A. YES.

11:01AM 11 Q. AND THAT'S DURING THAT SAME PERIOD WHEN THIS IN-HOUSE  
11:01AM 12 PROFICIENCY TESTING WORK WAS GOING ON?

11:01AM 13 A. YES.

11:01AM 14 Q. AND DO YOU SEE THE EMAIL IS FROM MR. BALWANI TO  
11:02AM 15 DR. PANDORI, DR. ROSENDORFF, MR. GEE, AND THEN COPIED TO  
11:02AM 16 DR. SAKSENA, DR. ANEKAL, AND ALSO ELIZABETH HOLMES.

11:02AM 17 DO YOU SEE THAT?

11:02AM 18 A. YES.

11:02AM 19 Q. AND WE TALKED ABOUT THIS BEFORE, BUT THOSE ARE AMONG THE  
11:02AM 20 GROUP OF PEOPLE WHO WOULD ROUTINELY SEND EMAILS AROUND THERANOS  
11:02AM 21 TO TALK ABOUT THE LAB AND HOW THINGS WERE GOING?

11:02AM 22 A. CORRECT.

11:02AM 23 Q. OKAY. AND THERANOS KEPT THOSE EMAILS SO IT COULD BE  
11:02AM 24 REFERRED BACK TO THEM FROM TIME TO TIME?

11:02AM 25 A. YES.

11:02AM 1 MR. COOPERSMITH: YOUR HONOR, WE OFFER EXHIBIT 3526,  
11:02AM 2 AND I WOULD POINT OUT THAT IT'S ON THE GOVERNMENT'S EXHIBIT  
11:02AM 3 LIST.

11:02AM 4 MR. BOSTIC: THERE ARE LAYERS OF HEARSAY HERE,  
11:02AM 5 YOUR HONOR.

11:02AM 6 THE COURT: DO YOU WANT TO LAY A BETTER FOUNDATION?  
11:02AM 7 I THINK THERE'S AN INSTITUTION FOUNDATION TO THE EXCEPTION  
11:02AM 8 YOU'RE ADVOCATING.

11:02AM 9 MR. COOPERSMITH: I'M LOOKING AT 803(6), YOUR HONOR.  
11:03AM 10 OKAY.

11:03AM 11 Q. SO, MS. CHEUNG, IT WAS NECESSARY AT THERANOS, WHEN THE  
11:03AM 12 IN-HOUSE PROFICIENCY TESTING WAS GOING ON FOR THE VARIOUS  
11:03AM 13 PEOPLE INVOLVED WITH THE PROCESS, TO GIVE EACH OTHER  
11:03AM 14 INFORMATION ABOUT WHAT RESULTS WERE COMING OUT OF THAT; RIGHT?

11:03AM 15 A. CORRECT.

11:03AM 16 Q. AND THAT IT WAS IMPORTANT TO TRY TO GET IT RIGHT, THAT  
11:03AM 17 THAT INFORMATION BE AS ACCURATE AS POSSIBLE WHEN PEOPLE WERE  
11:03AM 18 SENDING INFORMATION AROUND?

11:03AM 19 A. CORRECT.

11:03AM 20 Q. AND THAT WHEN -- ESPECIALLY WHEN ONE OF THE AUTHORS WAS  
11:03AM 21 SHARING IT WITH A WHOLE GROUP OF PEOPLE, IT WAS IMPORTANT THAT  
11:03AM 22 EVERYONE GET THE INFORMATION AND BE ON THE SAME PAGE AND  
11:03AM 23 UNDERSTAND THAT THEY COULD RELY ON THE INFORMATION AND GO LOOK  
11:03AM 24 IT UP, IF NECESSARY; RIGHT?

11:03AM 25 A. YES.

11:03AM 1 Q. OKAY. AND THIS EMAIL THAT WE'RE LOOKING AT, EXHIBIT 3526,  
11:03AM 2 IS ONE EXHIBIT OF THAT TYPE OF THING GOING ON AT THERANOS;  
11:03AM 3 RIGHT?

11:03AM 4 A. YES.

11:03AM 5 MR. COOPERSMITH: YOUR HONOR, WE OFFER 3526.

11:03AM 6 THE COURT: WHAT ABOUT 6(A)?

11:04AM 7 MR. COOPERSMITH: I'M SORRY?

11:04AM 8 THE COURT: 6(A), THE EXCEPTION.

11:04AM 9 MR. COOPERSMITH: YES, YOUR HONOR.

11:04AM 10 THE COURT: I DON'T THINK THAT'S BEEN MET YET.

11:04AM 11 MR. COOPERSMITH: I JUST WANT TO POINT OUT THIS IS  
11:04AM 12 ON THE GOVERNMENT'S EXHIBIT LIST. IT HAS THE --

11:04AM 13 THE COURT: BUT THEY HAVEN'T INTRODUCED IT, HAVE  
11:04AM 14 THEY?

11:04AM 15 MR. COOPERSMITH: NO, THEY HAVE NOT.

11:04AM 16 THE COURT: OKAY. RIGHT.

11:04AM 17 MR. COOPERSMITH: OKAY. YOUR HONOR, IN THAT CASE,  
11:04AM 18 THE WITNESS -- TWO OF THE WITNESSES WHO ARE THE FIRST TWO  
11:04AM 19 RECIPIENTS UNDER THE TO LINE, WE UNDERSTAND ARE GOING TO BE  
11:04AM 20 TESTIFYING VERY SHORTLY IN THIS TRIAL, SO WE MOVE THE COURT FOR  
11:04AM 21 CONDITIONAL ADMISSION OF THIS EXHIBIT SUBJECT TO IT GETTING  
11:04AM 22 ADMITTED THROUGH THOSE TWO WITNESSES WHO WERE THE FIRST TWO  
11:04AM 23 RECIPIENTS.

11:04AM 24 MR. BOSTIC: YOUR HONOR, IF THIS WERE AN  
11:04AM 25 AUTHENTICATION PROBLEM, THAT MIGHT BE A SOLUTION, BUT I DON'T

11:04AM 1 THINK THAT ADDRESSES THE MULTIPLE LEVELS OF HEARSAY HERE.

11:05AM 2 THE COURT: I'M GOING TO SUSTAIN THE OBJECTION.

11:05AM 3 MR. COOPERSMITH: I'LL ALSO POINT OUT, YOUR HONOR,

11:05AM 4 WE DON'T NEED TO ADMIT IT FOR THE TRUTH OF THE MATTER, TO TAKE

11:05AM 5 CARE OF MR. BOSTIC'S HEARSAY OBJECTION.

11:05AM 6 WE CAN SIMPLY ADMIT IT FOR STATE OF MIND OF MR. BALWANI,

11:05AM 7 WHICH IS OBVIOUSLY AN ISSUE IN THIS CASE.

11:05AM 8 MR. BOSTIC: YOUR HONOR, I THINK THAT STILL LEAVES

11:05AM 9 ONE LAYER OF HEARSAY.

11:05AM 10 THE COURT: SUSTAIN THE OBJECTION.

11:05AM 11 MR. COOPERSMITH: OKAY. WE'LL RETURN TO THAT WITH

11:05AM 12 ANOTHER WITNESS, YOUR HONOR. THANK YOU.

11:05AM 13 THE COURT: OKAY.

11:05AM 14 BY MR. COOPERSMITH:

11:05AM 15 Q. NOW, IF I HAVE MY DATES RIGHT, MS. CHEUNG, YOU LEFT

11:05AM 16 THERANOS ON APRIL 16TH OF 2014.

11:05AM 17 IS THAT THE RIGHT DATE?

11:05AM 18 A. I DON'T REMEMBER THE EXACT DATE.

11:05AM 19 Q. OKAY. BUT IN ANY EVENT, DID YOU -- WERE YOU STILL THERE

11:06AM 20 AT THERANOS WHEN DR. PANDORI SHOWED A SLIDE PRESENTATION ABOUT

11:06AM 21 ALTERNATIVE ASSESSMENT PROCEDURE AND HOW THAT SHOULD BE RUN AT

11:06AM 22 THERANOS?

11:06AM 23 A. NO.

11:06AM 24 Q. SO YOU DON'T HAVE ANY KNOWLEDGE OF THAT?

11:06AM 25 A. YES.

11:06AM 1 Q. SO IF DR. PANDORI HAD RECOMMENDED OR MADE STATEMENTS ABOUT  
11:06AM 2 HOW THIS TYPE OF PROFICIENCY TESTING SHOULD BE RUN AT THERANOS,  
11:06AM 3 YOU WOULD HAVE ALREADY LEFT, SO YOU WOULDN'T KNOW THAT?  
11:06AM 4 A. CORRECT.  
11:06AM 5 Q. OKAY. I WANT TO RETURN TO TWO EXHIBITS THAT WE COULDN'T  
11:06AM 6 FIND EARLIER THIS MORNING.  
11:06AM 7 A. YEAH.  
11:06AM 8 Q. AND I THINK I SOLVED THE PROBLEM. WELL, LET'S HOPE.  
11:06AM 9 IT WOULD BE IN OUR FIRST BINDER --  
11:06AM 10 A. OKAY.  
11:06AM 11 Q. -- THAT WE GAVE YOU LAST WEEK.  
11:06AM 12 AND THE FIRST ONE I WANT TO TALK ABOUT IS EXHIBIT 1430.  
11:07AM 13 A. OKAY.  
11:07AM 14 Q. OKAY. LOOKING AT EXHIBIT 1430, YOU SEE THAT THIS IS AN  
11:07AM 15 EMAIL FROM DR. ROSENDORFF?  
11:07AM 16 A. YES.  
11:07AM 17 Q. AND IT'S FROM JANUARY 16TH OF 2014?  
11:07AM 18 A. CORRECT.  
11:07AM 19 Q. AND IT'S TO AN EMAIL ADDRESS WHICH IS  
11:07AM 20 CLIA.LAB@THERANOS.COM?  
11:07AM 21 A. CORRECT.  
11:07AM 22 Q. AND YOU WERE PART OF THAT EMAIL GROUP?  
11:07AM 23 A. YES.  
11:07AM 24 Q. AND YOU SEE THAT THE EMAIL IS FROM DR. ROSENDORFF GIVING  
11:07AM 25 THE GROUP, THIS CLIA LAB GROUP THAT YOU WERE PART OF, A CERTAIN

11:07AM 1 QC POLICY.

11:07AM 2 DO YOU SEE THAT?

11:07AM 3 A. YES.

11:07AM 4 MR. COOPERSMITH: YOUR HONOR, WE OFFER EXHIBIT 1430.

11:07AM 5 MR. BOSTIC: NO OBJECTION.

11:07AM 6 THE COURT: IT'S ADMITTED. IT MAY BE PUBLISHED.

11:07AM 7 (DEFENDANT'S EXHIBIT 1430 WAS RECEIVED IN EVIDENCE.)

11:08AM 8 BY MR. COOPERSMITH:

11:08AM 9 Q. IF WE LOOK AT THE FIRST PAGE, IT SAYS, "DEAR CLIA, PLEASE

11:08AM 10 REFER TO THE FOLLOWING QC POLICIES."

11:08AM 11 AND IT'S FROM ADAM?

11:08AM 12 A. YES.

11:08AM 13 Q. AND WHEN YOU WOULD RECEIVE SOMETHING LIKE THIS, IS IT FAIR

11:08AM 14 TO SAY THAT YOU WOULD READ IT?

11:08AM 15 A. YES.

11:08AM 16 Q. AND DO YOUR BEST TO FOLLOW THE DIRECTION?

11:08AM 17 A. YES.

11:08AM 18 Q. AND IF YOU GO TO THE NEXT PAGE, AT THIS POINT HE DIDN'T

11:08AM 19 SIGN IT.

11:08AM 20 DO YOU SEE THAT?

11:08AM 21 A. UH-HUH, YES.

11:08AM 22 Q. BUT HE SENT IT BY EMAIL; RIGHT?

11:08AM 23 A. CORRECT.

11:08AM 24 Q. AND I ASSUME IF HE SENT IT BY EMAIL AND SAID PLEASE REFER

11:08AM 25 TO THE QC POLICY, YOU WOULD TREAT THAT AS SOMETHING THAT YOU



11:08AM 1 NEEDED TO PAY ATTENTION TO WHETHER OR NOT IT WAS SIGNED; IS  
11:08AM 2 THAT RIGHT?

11:08AM 3 A. YES.

11:08AM 4 Q. OKAY. AND IF YOU GO TO THE NEXT PAGE, DO YOU SEE THAT  
11:08AM 5 THERE'S A -- AT THE TOP IT SAYS QUALITY CONTROL POLICIES, AND  
11:08AM 6 THEN IT HAS DAILY QC, AND THEN IT HAS CONTINUOUS QC.

11:08AM 7 DO YOU SEE THAT?

11:08AM 8 A. YES.

11:08AM 9 Q. OKAY. AND WE'VE TALKED, AND I THINK YOU'VE TALKED ABOUT  
11:09AM 10 ON DIRECT THIS DAILY QC THAT WAS RUN?

11:09AM 11 A. YES.

11:09AM 12 Q. AND THAT WAS EVERY MACHINE, EVERY ASSAY, EVERY DAY,  
11:09AM 13 RUNNING QUALITY CONTROL TO MAKE SURE IT WAS SUITABLE FOR  
11:09AM 14 PATIENT TESTING; RIGHT?

11:09AM 15 A. CORRECT.

11:09AM 16 Q. AND THEN THERE WAS -- ARE YOU AWARE THAT THERE WAS ANOTHER  
11:09AM 17 LAYER OF QUALITY CONTROL CALLED CONTINUOUS QC?

11:09AM 18 A. CORRECT.

11:09AM 19 Q. AND THAT WAS LOOKING AT TRENDS OVER TIME; RIGHT?

11:09AM 20 A. YES.

11:09AM 21 Q. AND IF WE WANTED TO LOOK AT THE TRENDS OVER TIME DATA FOR  
11:09AM 22 QUALITY CONTROL, WE COULD REFER TO THE LABORATORY INFORMATION  
11:09AM 23 SYSTEM?

11:09AM 24 A. YES.

11:09AM 25 Q. SO YOU WERE NOT INVOLVED WITH THE CONTINUOUS QC PROCESS?

11:09AM 1 A. NOT ALL OF THE TIME, NO.

11:09AM 2 Q. OKAY. SO, FOR EXAMPLE, IF YOU LOOK AT SECTION 2.8, IT

11:09AM 3 TALKS ABOUT SOMETHING CALLED THE WESTGARD RULES?

11:09AM 4 A. YES.

11:09AM 5 Q. AND DO YOU UNDERSTAND THAT THAT'S A PARTICULAR SET OF

11:09AM 6 RULES INVENTED BY SOMEONE NAMED WESTGARD THAT GOVERN HOW LABS

11:09AM 7 ARE SUPPOSED TO LOOK AT CONTINUOUS QC?

11:09AM 8 A. YES.

11:09AM 9 Q. AND ARE YOU AN EXPERT IN WESTGARD RULES?

11:10AM 10 A. NO.

11:10AM 11 Q. AND WAS IT YOUR JOB TO IMPLEMENT WESTGARD RULES?

11:10AM 12 A. SOMETIMES.

11:10AM 13 Q. SOMETIMES. SO YOU HAD SOME IDEA OF WHAT IT WAS?

11:10AM 14 A. YES.

11:10AM 15 Q. AND IT'S PART OF THE QC PROCESS TO LOOK AT THE DATA IN THE

11:10AM 16 TRENDS; CORRECT?

11:10AM 17 A. YES.

11:10AM 18 Q. AND IF THERE WAS SOME PROBLEM WITH THE WAY THE DATA

11:10AM 19 TRENDS, THAT WOULD ALSO BE A REASON WHY A DEVICE WOULD BE

11:10AM 20 DEEMED TO FAIL QC?

11:10AM 21 A. YES.

11:10AM 22 Q. AND IF YOU GO TO THE NEXT PAGE, DO YOU SEE THAT THERE'S AN

11:10AM 23 EDISON QC SECTION, AND THERE'S AN EDISON DAILY QC; RIGHT?

11:10AM 24 A. CORRECT.

11:10AM 25 Q. AND IF YOU GO TO SECTION 3.2.1 IN PARTICULAR, IT SAYS,

11:10AM 1 "RUN AT LEAST 2 AND PREFERABLY LEVELS. ENSURE QC MATERIAL IS  
11:10AM 2 NOT OUTDATED OR EXPIRED."

11:10AM 3 RIGHT?

11:10AM 4 A. CORRECT.

11:10AM 5 Q. AND THE LEVELS, THAT'S WHAT WE WERE REFERRING TO BEFORE,  
11:10AM 6 THE LEVEL 1 AND LEVEL 2 QC THAT WE WERE TALKING ABOUT EARLIER  
11:10AM 7 THIS MORNING?

11:10AM 8 A. YES.

11:10AM 9 Q. OKAY. AND THEN IF YOU GO TO 3.2.3, MAYBE THAT HELPS  
11:10AM 10 CLARIFY IT, IT SAYS, "IF QC FAILS (DEFINED AS A FAILURE OF ONE  
11:11AM 11 OR MORE LEVELS) REPEAT QC."

11:11AM 12 RIGHT?

11:11AM 13 A. CORRECT.

11:11AM 14 Q. SO TO BE PASSING, IT HAS TO PASS BOTH LEVELS?

11:11AM 15 A. YES.

11:11AM 16 Q. AND IT SAYS, "IF QC STILL FAILS, WE RECALIBRATE  
11:11AM 17 INSTRUMENTS."

11:11AM 18 DO YOU SEE THAT?

11:11AM 19 A. YES.

11:11AM 20 Q. AND BELOW THAT IT SAYS, "IF QC PASSES RUN PATIENT  
11:11AM 21 SPECIMENS."

11:11AM 22 A. CORRECT.

11:11AM 23 Q. AND THEN "IF QC STILL FAILS AFTER RECALIBRATION, STOP AND  
11:11AM 24 CONSULT THE THERANOS TECHNICAL SUPPORT"; CORRECT?

11:11AM 25 A. YES.

11:11AM 1 Q. AND THAT'S WHAT YOU DID WHEN YOU WERE AT THE LAB; RIGHT?

11:11AM 2 A. YES.

11:11AM 3 Q. AND LET'S TAKE A LOOK AT 1525.

11:11AM 4 THAT SHOULD BE IN THE SAME BINDER, MS. CHEUNG.

11:11AM 5 A. YES.

11:11AM 6 Q. OKAY. AND IF WE GO TO THE BEGINNING OR THE EARLIEST EMAIL

11:11AM 7 IN TIME YOU SEE THERE'S AN EMAIL FROM YOU TO DR. ROSENDORFF,

11:12AM 8 JAMIE LIU, AND A COPY TO DR. PANDORI?

11:12AM 9 A. ON WHICH PAGE IS THIS?

11:12AM 10 Q. ON PAGE 4 OF THE EXHIBIT. I'M SORRY.

11:12AM 11 A. YES.

11:12AM 12 Q. AND THAT'S DATED FEBRUARY 10TH, 2014?

11:12AM 13 A. YES.

11:12AM 14 Q. OKAY. AND IF YOU LOOK AT IT, DON'T READ ANYTHING OUT LOUD

11:12AM 15 YET, BUT IF YOU GO TO PAGE 3, YOU SEE AT THE TOP OF PAGE 3 --

11:12AM 16 WELL, IT STARTS ON THE BOTTOM OF PAGE 2 AND GOES ON TO THE TOP

11:12AM 17 OF PAGE 3, THERE'S AN EMAIL FROM YOU TO DR. ROSENDORFF ABOUT

11:12AM 18 HOW YOU MIGHT BE ABLE TO DELETE CERTAIN DATA POINTS THAT CAN BE

11:12AM 19 DEEMED OUTLIERS.

11:12AM 20 DO YOU SEE THAT?

11:12AM 21 A. YES.

11:12AM 22 Q. OKAY. THIS IS ABOUT THAT SAME ISSUE THAT WE HAVE BEEN

11:12AM 23 TALKING ABOUT AND YOU TALKED ABOUT ON DIRECT ABOUT THE DELETION

11:12AM 24 OF CERTAIN DATA POINTS CALLED OUTLIERS?

11:12AM 25 A. CORRECT.

11:12AM 1 Q. RIGHT. AND THEN ON PAGE 1 THE EMAIL GOES ON WITH A  
11:13AM 2 DISCUSSION BETWEEN DR. ROSENDORFF AND DR. PANDORI ABOUT THAT  
11:13AM 3 SAME ISSUE; CORRECT?

11:13AM 4 A. CAN YOU -- WHERE IS THAT LOCATED?

11:13AM 5 Q. OH, I'M SORRY. IF YOU LOOK AT PAGE 1?

11:13AM 6 A. PAGE 1. YES.

11:13AM 7 MR. COOPERSMITH: OKAY. YOUR HONOR, WE OFFER  
11:13AM 8 EXHIBIT 1525.

11:13AM 9 MR. BOSTIC: NO OBJECTION.

11:13AM 10 THE COURT: IT'S ADMITTED. IT MAY BE PUBLISHED.

11:13AM 11 (DEFENDANT'S EXHIBIT 1525 WAS RECEIVED IN EVIDENCE.)

11:13AM 12 BY MR. COOPERSMITH:

11:13AM 13 Q. SO LET'S GO TO THAT EARLIEST EMAIL IN TIME. AND THIS IS  
11:13AM 14 ONE OF THOSE OCCASIONS WHERE YOU ARE REPORTING THAT LEVEL 1 QC  
11:13AM 15 FOR TSH FAILED AGAIN YOU SAY; RIGHT?

11:13AM 16 A. YES.

11:13AM 17 Q. OKAY. AND THAT WAS ONE OF TWO LEVELS, SO AS WE TALKED  
11:13AM 18 ABOUT BEFORE, SINCE IT FAILED ON LEVEL 1, IT WAS DEEMED NOT TO  
11:14AM 19 PASS AT ALL; RIGHT?

11:14AM 20 A. CORRECT.

11:14AM 21 Q. AND THEN BELOW -- ABOVE THAT DR. ROSENDORFF SAYS, "PLEASE  
11:14AM 22 EXCLUDE THE DATA .1511 RAW COUNT FROM INSTRUMENT E-000187 AND  
11:14AM 23 RECALC," OR RECALCULATION.

11:14AM 24 DO YOU SEE THAT?

11:14AM 25 A. CORRECT.

11:14AM 1 Q. AND THAT'S -- YOU FOLLOWED DR. ROSENDORFF'S DIRECTION?

11:14AM 2 A. YES.

11:14AM 3 Q. AND MR. BALWANI IS NOT ON THIS EMAIL, IS HE?

11:14AM 4 A. CORRECT.

11:14AM 5 Q. AND THEN IF YOU GO TO PAGE 3 THERE'S A DISCUSSION BETWEEN

11:14AM 6 YOU AND DR. ROSENDORFF ABOUT WHETHER OR NOT THE REAGENTS ARE

11:14AM 7 EXPIRED OR NOT.

11:14AM 8 DO YOU SEE THAT?

11:14AM 9 A. YES.

11:14AM 10 Q. AND BECAUSE ONE OF THE PROBLEMS THAT COULD ARISE IS IF A

11:14AM 11 REAGENT OR A CHEMICAL USED IN THE PROCESS COULD EXPIRE, THAT

11:14AM 12 COULD AFFECT THE RESULT; CORRECT?

11:14AM 13 A. CORRECT.

11:14AM 14 Q. SO YOU ALWAYS WANT TO MAKE SURE YOU HAVE UNEXPIRED

11:14AM 15 REAGENTS; RIGHT?

11:14AM 16 A. CORRECT.

11:14AM 17 Q. AND YOU WERE CHECKING DATA AND YOU DID; RIGHT?

11:14AM 18 A. YES.

11:15AM 19 Q. AND THE REAGENT LOOKED FINE; RIGHT?

11:15AM 20 A. YES.

11:15AM 21 Q. AND SO THEN YOU SAID ABOVE THAT AT THE VERY TOP, "USED A

11:15AM 22 NEW BSA BUFFER, STILL FAILED. IF I DELETE TO POINT THAT COULD

11:15AM 23 POSSIBLY CONSIDERED OUTLIERS ON MY RERUN, THE QC WOULD PASS."

11:15AM 24 A. YEAH.

11:15AM 25 Q. SO YOU WERE TALKING ABOUT HOW MAYBE YOU COULD DELETE THE

11:15AM 1 OUTLIER; RIGHT?

11:15AM 2 A. YES.

11:15AM 3 Q. AND THEN DR. ROSENDORFF WRITES BACK TO YOU ON PAGE 2. HE

11:15AM 4 SAYS, "HI ERIKA,

11:15AM 5 "YES WE CAN DELETE AS MANY AS 2 OF THE 6 DATA POINTS,

11:15AM 6 ADAM"?

11:15AM 7 A. CORRECT.

11:15AM 8 Q. AND MR. BALWANI IS NOT ON THE EMAIL, IS HE?

11:15AM 9 A. CORRECT.

11:15AM 10 Q. AND IT'S NOT HIM GIVING THE DIRECTION?

11:15AM 11 A. CORRECT.

11:15AM 12 Q. IT'S A MEDICAL DOCTOR?

11:15AM 13 A. CORRECT.

11:15AM 14 Q. AND THEN DR. PANDORI ASKS A QUESTION.

11:15AM 15 DO YOU SEE THAT?

11:15AM 16 A. YES.

11:15AM 17 Q. AND THEN ABOVE THAT DR. ROSENDORFF WRITES TO DR. PANDORI,

11:16AM 18 "THIS RULE WILL BE PART OF THE ALGORITHM WHEN THE EDISON 3.5

11:16AM 19 CALCULATIONS ARE AUTOMATED."

11:16AM 20 RIGHT?

11:16AM 21 A. CORRECT.

11:16AM 22 Q. AND THEN GOING TO THE FIRST PAGE, DR. PANDORI WRITES AT

11:16AM 23 THE BOTTOM, "SO IT IS OK FOR THE CLA TO DO THIS AUTOMATICALLY

11:16AM 24 UNTIL THEN, I ASSUME."

11:16AM 25 RIGHT?

11:16AM 1 A. YES.

11:16AM 2 Q. AND CLA WOULD BE CLINICAL LAB ASSOCIATE?

11:16AM 3 A. YES.

11:16AM 4 Q. SO THAT WOULD BE SOMEONE LIKE YOU?

11:16AM 5 A. YES.

11:16AM 6 Q. AND THEN ABOVE THAT YOU SEE DR. ROSENDORFF WRITES, "YES --

11:16AM 7 IT'S OK IF THEY DO IT -- THAT IS WHY WE ARE RUNNING 3

11:16AM 8 EDISONS -- TO GET ENOUGH DATA POINTS AND TO AVERAGE OUT

11:16AM 9 VARIABILITY."

11:16AM 10 RIGHT?

11:16AM 11 A. YES.

11:16AM 12 Q. AND THAT'S WHAT DR. ROSENDORFF SAID?

11:16AM 13 A. YES.

11:16AM 14 Q. AND MR. BALWANI IS NOT ON THAT EMAIL?

11:16AM 15 A. YES.

11:16AM 16 Q. AND DR. PANDORI'S RESPONSE IS "THANK YOU"?

11:16AM 17 A. YES.

11:16AM 18 Q. AND BASED ON YOUR TESTIMONY, IS IT FAIR TO SAY THAT YOU

11:17AM 19 DISAGREED WITH DR. ROSENDORFF ABOUT THIS?

11:17AM 20 A. YES, BECAUSE WE DIDN'T HAVE AN SOP THAT ARTICULATED WHEN

11:17AM 21 WE GET RID OF OUTLIERS.

11:17AM 22 Q. SO IS IT FAIR TO SAY THAT YOU DISAGREED WITH

11:17AM 23 DR. ROSENDORFF?

11:17AM 24 A. YES.

11:17AM 25 Q. OKAY. IF YOU COULD TURN IN THE GOVERNMENT'S BINDER TO



11:17AM 1 EXHIBIT 1662.

11:17AM 2 OKAY. LOOKING AT EXHIBIT 1662, THIS IS ANOTHER EXHIBIT

11:17AM 3 THAT YOU SAW ON DIRECT?

11:17AM 4 A. YES.

11:17AM 5 Q. AND THIS IS ALREADY PUBLISHED, YOUR HONOR.

11:18AM 6 MR. ALLEN, IF YOU COULD PUT THAT ON THE SCREEN.

11:18AM 7 IS IT FAIR TO SAY, MS. CHEUNG, THAT THIS IS AN EMAIL FROM

11:18AM 8 TYLER SHULTZ TO ELIZABETH HOLMES, AND THEN AT THE TOP IT'S

11:18AM 9 MS. HOLMES FORWARDING THAT EMAIL TO DR. YOUNG WITH A COPY TO

11:18AM 10 MR. BALWANI?

11:18AM 11 A. YES.

11:18AM 12 Q. RIGHT. I BELIEVE YOU TESTIFIED THAT YOU WERE AWARE OF

11:18AM 13 MR. SHULTZ SENDING THIS EMAIL TO MS. HOLMES?

11:18AM 14 A. YES.

11:18AM 15 Q. AND THAT IT SORT OF LISTED VARIOUS ISSUES THAT MR. SHULTZ

11:18AM 16 HAD ABOUT SOME OF THE TESTING GOING ON AT THERANOS; CORRECT?

11:18AM 17 A. YES.

11:18AM 18 Q. AND SOME OF IT WAS LIKE STATISTICAL TYPE ISSUES; RIGHT?

11:18AM 19 A. CORRECT.

11:18AM 20 Q. AND YOU DISCUSSED THOSE ISSUES WITH MR. SHULTZ; RIGHT?

11:18AM 21 A. YES.

11:18AM 22 Q. AND THIS IS GEORGE SHULTZ'S GRANDSON; RIGHT?

11:18AM 23 A. CORRECT.

11:18AM 24 Q. RIGHT. SO YOU KNOW THAT MR. SHULTZ, TYLER SHULTZ, HAD HAD

11:19AM 25 VARIOUS MEETINGS WITH DR. YOUNG TO TALK ABOUT THESE POINTS THAT

11:19AM 1 HE WAS CONCERNED ABOUT; RIGHT?

11:19AM 2 A. CORRECT.

11:19AM 3 Q. AND YOU KNOW THAT DR. YOUNG SPENT TIME WITH MR. SHULTZ  
11:19AM 4 EXPLAINING, YOU KNOW, HIS VIEW OF THAT; RIGHT?

11:19AM 5 A. CORRECT.

11:19AM 6 Q. AND YOU UNDERSTAND THAT DR. YOUNG RESPONDED TO ALL OF  
11:19AM 7 THESE POINTS AND HAD A DIFFERENT VIEW OF THE WORLD THAN  
11:19AM 8 MR. SHULTZ DID?

11:19AM 9 A. CORRECT.

11:19AM 10 Q. AND THAT YOU DID; RIGHT?

11:19AM 11 A. CORRECT.

11:19AM 12 Q. AND THAT THE OUTCOME OF THIS PROCESS WAS A RESPONSE THAT  
11:19AM 13 MR. SHULTZ GOT THAT SORT OF LISTED IN DETAIL ALL OF THE REASONS  
11:19AM 14 WHY DR. YOUNG DISAGREED WITH MR. SHULTZ; RIGHT?

11:19AM 15 A. CORRECT.

11:19AM 16 Q. AND MR. BALWANI DISAGREED?

11:19AM 17 A. CORRECT.

11:19AM 18 Q. AND YOU SAW THAT, TOO; RIGHT?

11:19AM 19 A. YES.

11:19AM 20 Q. AND SO YOU DISAGREED WITH DR. YOUNG ABOUT HOW HE SAW THE  
11:19AM 21 WORLD ABOUT THESE ISSUES THAT MR. SHULTZ WAS RAISING; CORRECT?

11:19AM 22 A. YES.

11:19AM 23 Q. OKAY.

11:19AM 24 YOUR HONOR, MAY I CONFER WITH MY TEAM?

11:19AM 25 THE COURT: YES.

11:19AM 1 (DISCUSSION AMONGST DEFENSE COUNSEL OFF THE RECORD.)

11:20AM 2 THE COURT: FOLKS, I THINK WE'LL BREAK AT NOON.

11:20AM 3 WE'LL BREAK AT NOON.

11:20AM 4 WE'RE GOING TO FINISH OUR DAY AT 3:00 TODAY. I DO WANT

11:20AM 5 YOU TO KNOW, TO KEEP US ON SCHEDULE, I MAY BE ASKING US TO GO

11:20AM 6 UNTIL 4:00 ON SOME DAYS, SO I WOULD GIVE YOU THAT NOTICE NOW

11:20AM 7 FOR YOUR PLANNING. WE'LL TALK ABOUT THIS MAYBE TOMORROW OR

11:20AM 8 CERTAINLY NEXT WEEK. SO I'LL GIVE YOU THIS NOTICE SO YOU CAN

11:20AM 9 FORECAST WITH THOSE, YOUR EMPLOYERS AND OTHERS, AND THEN WE'LL

11:20AM 10 TALK ABOUT IT. BUT I THINK WE'LL HAVE TO GO UNTIL 4:00 ON OUR

11:20AM 11 DAYS.

11:20AM 12 YOU'LL LET ME KNOW, AND WE'LL HAVE A DISCUSSION ABOUT

11:20AM 13 THAT. SO THANK YOU.

11:20AM 14 (PAUSE IN PROCEEDINGS.)

11:20AM 15 MR. COOPERSMITH: THANK YOU, YOUR HONOR, FOR THE

11:20AM 16 COURT'S INDULGENCE.

11:21AM 17 Q. JUST BRIEFLY, MS. CHEUNG.

11:21AM 18 SO THE EXHIBIT THAT WE WERE JUST LOOKING AT, 1662, WHERE

11:21AM 19 THIS -- THESE ISSUES WERE -- THESE ISSUES THAT MR. SHULTZ HAD

11:21AM 20 CONCERNS ABOUT AND THAT YOU HAD CONCERNS ABOUT, BY THE TIME

11:21AM 21 THAT MR. SHULTZ SENT THIS EMAIL TO MS. HOLMES, THESE ISSUES HAD

11:21AM 22 ALREADY BEEN AIRED WITH DR. YOUNG BEFORE MR. SHULTZ SENT HIS

11:21AM 23 EMAIL TO MS. HOLMES; RIGHT? MS. HOLMES.

11:21AM 24 A. CAN YOU REPEAT THAT.

11:21AM 25 Q. SURE. YEAH.

11:21AM 1 ON APRIL 11TH, 2014, THE DAY OF MR. SHULTZ'S EMAIL TO  
11:21AM 2 MS. HOLMES --  
11:21AM 3 A. YES.  
11:21AM 4 Q. -- AND THEN THAT SAME DAY IT'S FORWARDED TO DR. YOUNG, BY  
11:21AM 5 THAT TIME, BY APRIL 11TH, MR. SHULTZ, YOU'RE AWARE, HAD ALREADY  
11:21AM 6 HAD THESE DISCUSSIONS WHICH WE WERE REFERRING TO WITH  
11:21AM 7 DR. YOUNG; RIGHT?  
11:21AM 8 A. YES.  
11:21AM 9 Q. OKAY. AND THEN AFTER THAT HE SENT THE EMAIL TO  
11:21AM 10 MS. HOLMES?  
11:21AM 11 A. CORRECT.  
11:21AM 12 Q. AND THEN THERE WAS EVEN A FURTHER RESPONSE FROM DR. YOUNG  
11:22AM 13 AND MR. BALWANI; RIGHT?  
11:22AM 14 A. YES.  
11:22AM 15 MR. COOPERSMITH: OKAY. NO FURTHER QUESTIONS,  
11:22AM 16 YOUR HONOR.  
11:22AM 17 THE COURT: REDIRECT?  
11:22AM 18 MR. BOSTIC: YES, YOUR HONOR. THANK YOU.  
11:22AM 19 THE COURT: YOU CAN STAND UP AND STRETCH FOR A  
11:22AM 20 MOMENT IF YOU WOULD LIKE.  
11:22AM 21 THE WITNESS: I'M OKAY.  
11:22AM 22 THE COURT: OKAY.  
11:22AM 23 ///  
11:22AM 24 ///  
11:22AM 25 ///

**REDIRECT EXAMINATION**

BY MR. BOSTIC:

Q. GOOD MORNING, MS. CHEUNG.

A. GOOD MORNING.

Q. I'D LIKE TO ASK YOU A FEW QUESTIONS FOLLOWING UP ON SOME TOPICS THAT YOU'VE DISCUSSED WITH MR. COOPERSMITH OVER THE LAST COUPLE OF DAYS.

A. OKAY.

Q. FIRST, MS. WACHS, COULD YOU PUT ON THE SCREEN EXHIBIT 3741A, PLEASE. THIS IS PREVIOUSLY ADMITTED.

DO YOU REMEMBER A DISCUSSION WITH MR. COOPERSMITH REGARDING THE DIFFERENT TESTS OFFERED BY THERANOS?

A. YES.

Q. AND DO YOU RECALL THAT LAST WEEK MR. COOPERSMITH WAS GOING THROUGH THIS LIST WITH YOU, AND I THINK HE MADE IT THROUGH THE A'S, AND HE WAS IDENTIFYING TESTS THAT WERE PERFORMED ON, I THINK HE CALLED IT, THERANOS TECHNOLOGY.

DO YOU RECALL THAT?

A. YES.

Q. TO BE CLEAR, THE TESTS THAT YOU AND MR. COOPERSMITH WERE DISCUSSING THEN, WERE THEY PERFORMED ON THE THERANOS BUILT ANALYZER, THE EDISON?

A. NO.

Q. WHAT EQUIPMENT AT THERANOS WAS USED TO RUN THOSE TESTS?

A. ALL OF THE TESTS MENTIONED WERE RUN ON THE MODIFIED

11:23AM 1 SIEMENS ADVIA, WHICH WAS A COMMERCIALLY AVAILABLE MACHINE THAT  
11:23AM 2 THERANOS HAD BUILT THESE T-CUPS IN ORDER TO RUN THOSE ASSAYS.  
11:23AM 3 Q. DO YOU HAVE AN UNDERSTANDING FROM YOUR EXPERIENCE WITH THE  
11:24AM 4 EDISON DEVICE AS TO WHETHER THE EDISON WOULD HAVE BEEN CAPABLE  
11:24AM 5 OF RUNNING THE ASSAYS THAT YOU WERE DISCUSSING THEN WITH  
11:24AM 6 MR. COOPERSMITH?  
11:24AM 7 MR. COOPERSMITH: OBJECTION, YOUR HONOR.  
11:24AM 8 FOUNDATION.  
11:24AM 9 MR. BOSTIC: THIS IS A YES OR NO QUESTION,  
11:24AM 10 YOUR HONOR.  
11:24AM 11 THE COURT: CAN YOU ANSWER THAT YES OR NO?  
11:24AM 12 THE WITNESS: NO.  
11:24AM 13 BY MR. BOSTIC:  
11:24AM 14 Q. DO YOU KNOW WHETHER THE EDISON THAT YOU OPERATED WAS  
11:24AM 15 LIMITED TO A CERTAIN KIND OR KINDS OF ASSAYS?  
11:24AM 16 A. YES.  
11:24AM 17 Q. WHAT KIND OR KINDS OF ASSAYS WAS IT LIMITED TO?  
11:24AM 18 A. IT WAS LIMITED TO ELISA OR IMMUNOASSAYS.  
11:24AM 19 Q. WERE SOME OF THE ASSAYS THAT YOU DISCUSSED WITH  
11:24AM 20 MR. COOPERSMITH, ASSAYS THAT FELL OUTSIDE OF THAT CATEGORY THAT  
11:24AM 21 THE EDISON COULD DO?  
11:24AM 22 A. YES.  
11:24AM 23 Q. TODAY YOU HAD SOME FURTHER DISCUSSION WITH MR. COOPERSMITH  
11:24AM 24 ABOUT SOME OTHER IMMUNOASSAYS ON THE THERANOS TEST MENU.  
11:24AM 25 DO YOU RECALL THAT?

11:24AM 1 A. YES.

11:24AM 2 Q. IS IT STILL YOUR TESTIMONY THAT IN YOUR TIME AT THE

11:25AM 3 COMPANY, THE EDISON DEVICE WAS ONLY EVER USED FOR A MAXIMUM OF

11:25AM 4 12 TESTS?

11:25AM 5 A. THAT IS CORRECT.

11:25AM 6 Q. MR. COOPERSMITH ASKED YOU I GUESS A HYPOTHETICAL QUESTION

11:25AM 7 ABOUT WHETHER THERANOS COULD HAVE PUT MORE OF THOSE

11:25AM 8 IMMUNOASSAYS ON THE EDISON.

11:25AM 9 DO YOU RECALL THAT DISCUSSION?

11:25AM 10 A. I DO RECALL.

11:25AM 11 Q. DURING YOUR TIME AT THE COMPANY, THERE WAS RESEARCH AND

11:25AM 12 DEVELOPMENT WORK ONGOING; IS THAT RIGHT?

11:25AM 13 A. THAT IS CORRECT.

11:25AM 14 Q. WAS PART OF THE PURPOSE OF THAT ONGOING WORK TO TRY TO GET

11:25AM 15 MORE TESTS ONTO THE EDISON AS YOU UNDERSTOOD IT?

11:25AM 16 A. YES.

11:25AM 17 Q. DURING YOUR TIME AT THE COMPANY, DID THE COMPANY EVER

11:25AM 18 SUCCEED IN GETTING MORE THAN 12 TESTS UP AND RUNNING IN THE

11:25AM 19 CLINICAL LAB ON THE EDISON?

11:25AM 20 MR. COOPERSMITH: OBJECTION, YOUR HONOR. 602.

11:25AM 21 THE COURT: OVERRULED.

11:25AM 22 MR. BOSTIC: WOULD YOU LIKE THE QUESTION AGAIN?

11:26AM 23 THE COURT: YES, WHY DON'T YOU REPEAT THE QUESTION.

11:26AM 24 BY MR. BOSTIC:

11:26AM 25 Q. THE QUESTION WAS DURING YOUR TIME AT THE COMPANY, DID

11:26AM 1 THERANOS EVER SUCCEED IN GETTING MORE THAN 12 TESTS TO RUN ON  
11:26AM 2 THE EDISON IN THE CLINICAL LAB?

11:26AM 3 MR. COOPERSMITH: YOUR HONOR, OBJECTION. SAME  
11:26AM 4 OBJECTION.

11:26AM 5 THE COURT: UNDERSTOOD. OVERRULED.

11:26AM 6 THE WITNESS: NO.

11:26AM 7 MR. BOSTIC: YOU CAN TAKE THAT DOWN. THANK YOU,  
11:26AM 8 MS. WACHS.

11:26AM 9 Q. SPEAKING OF THE R&D WORK CONTINUING AT THERANOS, DO YOU  
11:26AM 10 REMEMBER MR. COOPERSMITH ASKING YOU WHETHER YOU THOUGHT THERE  
11:26AM 11 WAS ANYTHING WRONG WITH CONTINUING R&D WORK HAPPENING AT THE  
11:26AM 12 COMPANY?

11:26AM 13 A. YES, I REMEMBER.

11:26AM 14 Q. AND YOU ANSWERED GENERALLY YOU DIDN'T THINK ANYTHING WAS  
11:26AM 15 WRONG WITH THAT; RIGHT?

11:26AM 16 A. IT'S NORMAL TO DO RESEARCH AND DEVELOPMENT WORK AT A  
11:26AM 17 BIOTECH COMPANY.

11:26AM 18 Q. MR. COOPERSMITH PROVIDED AN ANALOGY USING IPHONES.

11:26AM 19 DO YOU RECALL THAT?

11:26AM 20 A. I DO RECALL THAT.

11:26AM 21 Q. AND I THINK HIS ANALOGY WAS THAT WHEN ONE IPHONE IS  
11:26AM 22 RELEASED, APPLE IS WORKING ON THE NEXT VERSION OF THAT DEVICE;  
11:27AM 23 IS THAT CORRECT?

11:27AM 24 A. THAT IS CORRECT.

11:27AM 25 Q. AT THERANOS THERE WERE -- LET ME JUST ASK, WERE THERE SOME



11:27AM 1 VERSIONS OF THE EDISON THAT WERE OPERATIONAL AND OTHER VERSIONS  
11:27AM 2 THAT WERE STILL IN DEVELOPMENT?

11:27AM 3 A. CAN YOU REPEAT THAT ONE MORE TIME.

11:27AM 4 Q. SURE.

11:27AM 5 DURING YOUR TIME AT THE COMPANY, WERE THERE SOME VERSIONS  
11:27AM 6 OF THE EDISON THAT WERE OPERATIONAL IN THE CLINICAL LAB AND  
11:27AM 7 OTHERS THAT WERE STILL IN DEVELOPMENT AND NOT YET READY?

11:27AM 8 A. YES, THAT IS CORRECT.

11:27AM 9 Q. CAN YOU REMIND US WHAT THAT BREAKDOWN WAS?

11:27AM 10 A. SO THE ONES THAT WERE OPERATIONAL WERE THE 3.5'S AND  
11:27AM 11 SOMETIMES THE 3.0'S, AND THE ONES THAT WERE IN DEVELOPMENT WERE  
11:27AM 12 THE 4.0'S OR THE MINILAB.

11:27AM 13 Q. SO THERANOS WAS WORKING ON THE 4.0 SERIES IN THE SAME WAY  
11:27AM 14 THAT APPLE MIGHT BE WORKING ON THE NEXT VERSION OF THE IPHONE?

11:27AM 15 A. CORRECT.

11:27AM 16 Q. WAS THAT THE ONLY R&D WORK HAPPENING AT THERANOS AT THE  
11:28AM 17 TIME?

11:28AM 18 A. NO. SO A LOT OF THE R&D WORK WAS ALSO WORKING ON THE  
11:28AM 19 ALREADY OPERATIONAL DEVICE ON THE EDISON 3.5'S AS WELL.

11:28AM 20 Q. SO THERE WAS CONTINUING R&D WORK EVEN AS TO THE DEVICE  
11:28AM 21 THAT WAS ALREADY BEING USED FOR PATIENT TESTING?

11:28AM 22 A. THAT IS CORRECT.

11:28AM 23 Q. AND WHAT WAS THE PURPOSE OF THAT CONTINUING R&D WORK?

11:28AM 24 A. IF YOU USED THE IPHONE EXAMPLE, IT'S AS IF YOU SHIPPED OUT  
11:28AM 25 IPHONE 11'S AND THEY WERE BREAKING OR THEY WEREN'T WORKING

11:28AM 1 PROPERLY, SO YOU WERE CONSTANTLY TRYING TO FIX THEM AS YOU HAD  
11:28AM 2 ALREADY SHIPPED THEM.

11:28AM 3 SO THE PURPOSE OF DOING THAT CONTINUING R&D WORK WAS TO  
11:28AM 4 FIX THE PROBLEMS THAT WE HAD SEEN WITH THIS ALREADY OPERATIONAL  
11:28AM 5 DEVICE IN ADDITION TO PUTTING UP INFRASTRUCTURE FOR THAT SET OF  
11:28AM 6 12 ASSAYS THAT WE TALKED ABOUT TO ACTUALLY START RUNNING MORE  
11:28AM 7 PATIENT SAMPLES ON THEM.

11:28AM 8 Q. AND DURING YOUR TIME AT THE COMPANY, DID YOU EVER SEE THAT  
11:29AM 9 CONTINUING WORK PRODUCED A SATISFYING PERMANENT SOLUTION TO THE  
11:29AM 10 PROBLEMS THAT YOU WERE SEEING?

11:29AM 11 MR. COOPERSMITH: OBJECTION, YOUR HONOR. 602.

11:29AM 12 THE COURT: THIS GOES TO HER PERSONAL KNOWLEDGE?

11:29AM 13 MR. BOSTIC: YES, YOUR HONOR.

11:29AM 14 THE COURT: IN YOUR PERSONAL KNOWLEDGE. YOU CAN  
11:29AM 15 ANSWER THE QUESTION.

11:29AM 16 THE WITNESS: CAN YOU REPEAT THE QUESTION SO I'M  
11:29AM 17 CLEAR.

11:29AM 18 BY MR. BOSTIC:

11:29AM 19 Q. THE QUESTION WAS DURING YOUR TIME AT THE COMPANY, DID YOU  
11:29AM 20 EVER SEE THAT CONTINUING R&D WORK PRODUCE A SATISFYING  
11:29AM 21 PERMANENT SOLUTION AS YOU UNDERSTOOD IT FOR THE PROBLEMS THAT  
11:29AM 22 YOU WERE SEEING?

11:29AM 23 A. FOR THE PROBLEMS THAT I WAS SEEING, IT WAS ALMOST ALWAYS  
11:29AM 24 THAT WE WERE CONTINUOUSLY MITIGATING OR FIXING THE PROBLEMS  
11:29AM 25 ONGOING, AND THERE WAS NO PERMANENT SOLUTION.

11:29AM 1 THERE WAS JUST A CHRONIC STATE OF PROBLEMS THAT WE HAD  
11:29AM 2 EXPERIENCED WITH THE EDISON 3.5 DEVICES, WHICH WERE  
11:29AM 3 OPERATIONAL.

11:29AM 4 Q. MS. WACHS, CAN WE PROJECT EXHIBIT 1431.

11:30AM 5 MS. CHEUNG, DO YOU RECALL SOME DISCUSSION WITH  
11:30AM 6 MR. COOPERSMITH ABOUT THERANOS'S TREATMENT OF OUTLIERS?

11:30AM 7 A. CORRECT.

11:30AM 8 Q. IN THIS EMAIL CHAIN --

11:30AM 9 LET'S SEE. MS. WACHS, LET'S LOOK AT PAGE 2, AND LET'S  
11:30AM 10 ZOOM IN ON THE MIDDLE OF THE PAGE.

11:30AM 11 MS. CHEUNG, DO YOU REMEMBER THIS MENTION OF A BELIEF THAT  
11:30AM 12 AN ALGORITHM FOR OUTLIER REMOVAL HAS BEEN INCORPORATED INTO  
11:30AM 13 NORMANDY SOFTWARE?

11:30AM 14 A. YES.

11:30AM 15 Q. AND LET'S COMPARE THAT TO PAGE 1, PLEASE. AGAIN, ZOOM IN  
11:31AM 16 ON THE MIDDLE OF THE PAGE.

11:31AM 17 THIS MESSAGE SAYS, "AT THIS TIME OUR OUTLIER REMOVAL  
11:31AM 18 PROCEDURE IS MANUAL."

11:31AM 19 DO YOU SEE THAT?

11:31AM 20 A. YES.

11:31AM 21 Q. AND DURING YOUR TIME AT THE COMPANY, WHICH OF THESE TWO  
11:31AM 22 DID YOU PERSONALLY OBSERVE? DID YOU SEE OUTLIERS BEING HANDLED  
11:31AM 23 AUTOMATICALLY AS PART OF AN ALGORITHM OR DID YOU SEE THEM BEING  
11:31AM 24 HANDLED MANUALLY?

11:31AM 25 A. THE MAJORITY OF THE TIME I WAS THERE IT WAS MANUAL, AND AT

11:31AM 1 THE TAIL END IT WAS AUTOMATED AT ONE POINT.

11:31AM 2 Q. AND WHEN YOU SAY THEY WERE HANDLED MANUALLY, CAN YOU  
11:31AM 3 DESCRIBE WHAT THAT MEANS?

11:31AM 4 A. SO IN TERMS OF OUTLIER REMOVAL PROCESS -- SO SOMETIMES  
11:31AM 5 OUTLIER REMOVAL IS A NORMAL PROCESS, AND AS WE HAD SHOWN THERE,  
11:31AM 6 IT'S LIKE IF SOMEONE TRIPS, YOU KNOW, SOMETIMES YOU'LL TAKE OUT  
11:31AM 7 THAT DATA.

11:31AM 8 BUT THERE ARE OTHER OCCURRENCES IN THE CASE OF THERANOS  
11:31AM 9 WHERE IT WAS SORT OF LEFT AT THE DISCRETION OF ANYONE WHO WAS  
11:31AM 10 WORKING WITH THE DATA TO JUST REMOVE WHATEVER DATA POINTS COULD  
11:32AM 11 GIVE US THE BEST RESULTS IF THE QC'S -- TO GET THE QC'S TO PASS  
11:32AM 12 IN MOST CASES.

11:32AM 13 SO IT COULD BE A CLA, A CLINICAL LAB ASSOCIATE, IT WOULD  
11:32AM 14 BE ONE OF THE R&D PEOPLE. THERE WASN'T REALLY A CLEAR  
11:32AM 15 STRUCTURE OR A CLEAR UNDERSTANDING OF WHAT WAS CONSIDERED AN  
11:32AM 16 OUTLIER VERSUS WHAT WAS CONSIDERED JUST A NORMAL DATA POINT.

11:32AM 17 SO IT WAS REALLY LEFT AT THE DISCRETION OF WHOEVER  
11:32AM 18 HAPPENED TO BE HANDLING THE DATA.

11:32AM 19 Q. SPEAKING OF THESE OUTLIER PROCESSES AGAIN, DO YOU RECALL  
11:32AM 20 LOOKING AT AN EXHIBIT TITLED OR NUMBERED 20451 WITH  
11:32AM 21 MR. COOPERSMITH? IT WAS WHEN HE HANDED UP A PACKET ON ITS OWN,  
11:32AM 22 NOT IN ONE OF THE BINDERS.

11:32AM 23 A. CAN YOU REPEAT THE NUMBER.

11:32AM 24 Q. YES. 20451?

11:32AM 25 A. YES.

11:32AM 1 Q. DO YOU HAVE THAT IN FRONT OF YOU?

11:32AM 2 A. I DO.

11:32AM 3 Q. AND DO YOU REMEMBER MR. COOPERSMITH ASKED YOU TO LOOK AT  
11:33AM 4 PAGE 14 OF THAT DOCUMENT?

11:33AM 5 A. YES.

11:33AM 6 Q. HE IDENTIFIED IT AS THE CAP PROFICIENCY TESTING MANUAL; IS  
11:33AM 7 THAT CORRECT?

11:33AM 8 A. THAT IS CORRECT.

11:33AM 9 Q. AND HE REFERRED YOU TO A SECTION ON THAT PAGE THAT  
11:33AM 10 MENTIONS OUTLIERS; IS THAT CORRECT?

11:33AM 11 A. THAT IS CORRECT.

11:33AM 12 Q. I'LL ASK YOU TO TAKE A MINUTE TO REVIEW THAT PARAGRAPH.  
11:33AM 13 AND THEN MY QUESTION FOR YOU IS DOES THAT DESCRIBE THE PROCESS  
11:33AM 14 THAT THERANOS USED?

11:33AM 15 A. THIS --

11:33AM 16 MR. COOPERSMITH: HOLD ON A SECOND. OBJECTION.  
11:33AM 17 RULE 702.

11:33AM 18 THE COURT: ARE YOU ASKING THIS WITNESS, ARE YOU  
11:33AM 19 ASKING THIS WITNESS THE PRACTICE THAT SHE ENGAGED IN AS AN  
11:33AM 20 EMPLOYEE AT HER JOB?

11:33AM 21 MR. BOSTIC: EXACTLY, YOUR HONOR.

11:33AM 22 I'M ASKING HER WHETHER WHAT SHE OBSERVED HAPPENING AT  
11:33AM 23 THERANOS IS THE SAME THAT WAS DESCRIBED IN THE DOCUMENT THAT  
11:33AM 24 THE DEFENSE DISCUSSED.

11:33AM 25 MR. COOPERSMITH: YOUR HONOR, SHE TESTIFIED THAT SHE

11:34AM 1 HAD NO AWARENESS OF THE COLLEGE OF AMERICAN PATHOLOGISTS OR  
11:34AM 2 THEIR DOCUMENT AND HAS NO AWARENESS OF THIS PROCESS.

11:34AM 3 SO WE'RE JUST, I THINK, MAKING THIS UP AS WE GO ALONG.  
11:34AM 4 SHE'S NEVER SEEN THIS BEFORE. SHE'S NOT -- IT'S A 702 ISSUE.

11:34AM 5 THE COURT: WELL, SHE'S NOT BEING CALLED TO TESTIFY  
11:34AM 6 AS AN EXPERT ON THIS?

11:34AM 7 MR. BOSTIC: CORRECT.

11:34AM 8 THE COURT: RIGHT.

11:34AM 9 MR. BOSTIC: I'M JUST ASKING HER TO READ THE WORDS.

11:34AM 10 THE COURT: RIGHT. OBJECTION IS OVERRULED.

11:34AM 11 SO YOU'RE NOT TO READ WHAT -- OUT LOUD, BUT JUST READ THIS  
11:34AM 12 TO YOURSELF, AND THEN MR. BOSTIC WILL ASK YOU ANOTHER QUESTION.

11:34AM 13 THE WITNESS: OKAY.

11:34AM 14 MR. COOPERSMITH: YOUR HONOR, IF SHE'S GOING TO READ  
11:34AM 15 THE DOCUMENT AND ANSWER QUESTIONS ABOUT THE TEXT, I THINK WE  
11:34AM 16 OUGHT TO JUST ADMIT THE DOCUMENT AT THAT POINT.

11:34AM 17 THE COURT: ARE YOU SEEKING ADMISSION OF THE  
11:34AM 18 DOCUMENT?

11:34AM 19 MR. BOSTIC: I AM NOT AT THIS TIME, YOUR HONOR.

11:34AM 20 THE COURT: OKAY.

11:34AM 21 THE WITNESS: CAN YOU REPEAT THE QUESTION ONE MORE  
11:34AM 22 TIME?

11:34AM 23 BY MR. BOSTIC:

11:34AM 24 Q. YES. THE QUESTION WAS IS THE -- DOES THE DESCRIPTION IN  
11:34AM 25 THE MANUAL REGARDING OUTLIER DETECTION, DOES THAT MATCH WHAT

11:35AM 1 YOU OBSERVED HAPPENING AT THERANOS?

11:35AM 2 A. NO, NO, IT DOESN'T MATCH.

11:35AM 3 Q. DO YOU RECALL A DISCUSSION WITH MR. COOPERSMITH ABOUT THE  
11:35AM 4 PROFICIENCY TESTING EXPERIMENT THAT WAS RUN IN FEBRUARY OF  
11:35AM 5 2014?

11:35AM 6 A. CORRECT.

11:35AM 7 Q. AND DO YOU RECALL LOOKING AT EMAILS WITH HIM THAT MENTION  
11:35AM 8 AN SOP OR SOP'S THAT WEREN'T FOLLOWED IN CONNECTION WITH THAT  
11:35AM 9 PROFICIENCY TESTING EXPERIMENT?

11:35AM 10 A. THAT IS CORRECT.

11:35AM 11 Q. CAN YOU REMIND US HOW LONG YOU HAD BEEN AT THE COMPANY  
11:35AM 12 WHEN THAT PROFICIENCY TESTING TOOK PLACE?

11:35AM 13 A. I HAD BEEN AT THE COMPANY -- WHEN THE PROFICIENCY TESTING  
11:35AM 14 WITH NEW YORK OR THE INTERNAL PROFICIENCY TESTING?

11:35AM 15 Q. THE NEW YORK SAMPLES IN FEBRUARY OF 2014.

11:35AM 16 A. IN FEBRUARY? FIVE MONTHS.

11:36AM 17 Q. AND IN ORDER TO DO YOUR JOB AT THE COMPANY, DID YOU NEED  
11:36AM 18 TO BE FAMILIAR WITH THE REGULATIONS AND ALL OF THE INTERNAL  
11:36AM 19 SOP'S THAT GOVERNED, FOR EXAMPLE, ALTERNATIVE ASSESSMENT  
11:36AM 20 PROFICIENCY?

11:36AM 21 A. NO, THAT WASN'T MY ROLE.

11:36AM 22 Q. DID YOUR SUPERIORS HAVE TO BE FAMILIAR WITH THOSE  
11:36AM 23 REGULATIONS AND PROCEDURES?

11:36AM 24 A. YES.

11:36AM 25 Q. FOCUSING SPECIFICALLY ON THAT FEBRUARY 2014 TEST, AND

11:36AM 1 THAT'S THE TEST WHERE WE LOOKED AT THE DATA; CORRECT?

11:36AM 2 A. CORRECT.

11:36AM 3 Q. AND FOCUSING SPECIFICALLY ON THAT TEST, DID YOUR  
11:36AM 4 SUPERIORS IN THE LAB SUPPORT THAT TEST BEING RUN AT THERANOS?

11:36AM 5 MR. COOPERSMITH: OBJECTION. HEARSAY.

11:36AM 6 THE COURT: I'M GOING TO SUSTAIN THE OBJECTION  
11:36AM 7 UNLESS YOU REPHRASE THE QUESTION.

11:36AM 8 BY MR. BOSTIC:

11:36AM 9 Q. MS. CHEUNG, LET ME ASK IT THIS WAY, THE TEST THAT WE'RE  
11:36AM 10 TALKING ABOUT RUN IN FEBRUARY OF 2014, WAS IT YOUR IDEA TO  
11:37AM 11 PERFORM THAT EXPERIMENT AT THERANOS?

11:37AM 12 A. NO.

11:37AM 13 Q. WHO DIRECTED -- WELL, WERE YOU INVOLVED IN PERFORMING THAT  
11:37AM 14 EXPERIMENT?

11:37AM 15 A. YES.

11:37AM 16 Q. WHO DIRECTED YOU TO PERFORM THAT EXPERIMENT AT THERANOS?

11:37AM 17 A. THE -- IT WAS THE LAB DIRECTOR, AND THE MEDICAL DIRECTOR,  
11:37AM 18 AND THE EXECUTIVE STAFF.

11:37AM 19 Q. AND SO WHO ARE WE TALKING ABOUT SPECIFICALLY?

11:37AM 20 A. MARK PANDORI AND ADAM ROSENDORFF.

11:37AM 21 Q. THEY ARE THE ONES WHO WERE REQUESTING THAT YOU PERFORM  
11:37AM 22 THAT EXPERIMENT?

11:37AM 23 A. YES.

11:37AM 24 MR. COOPERSMITH: YOUR HONOR, THAT LAST ANSWER I'M  
11:37AM 25 MOVING TO STRIKE ON A HEARSAY BASIS.



11:37AM 1 THE COURT: OVERRULED.

11:37AM 2 BY MR. BOSTIC:

11:37AM 3 Q. WHEN THIS HAPPENED, THIS WAS NOT AT THE END OF YOUR TIME

11:37AM 4 AT THE COMPANY; IS THAT CORRECT?

11:37AM 5 A. THAT IS CORRECT.

11:37AM 6 Q. AND THROUGHOUT YOUR ADDITIONAL TIME AT THE COMPANY, DID

11:37AM 7 YOU EVER BECOME MORE COMFORTABLE WITH THERANOS'S DELETION OF

11:38AM 8 OUTLIERS FROM THE TESTING DATA?

11:38AM 9 A. NO.

11:38AM 10 Q. I'D LIKE TO TALK ABOUT PROFICIENCY TESTING A LITTLE BIT.

11:38AM 11 DO YOU RECALL DISCUSSING THAT TOPIC WITH MR. COOPERSMITH?

11:38AM 12 A. YES.

11:38AM 13 Q. AND HE ASKED YOU TO LOOK AT EXHIBIT 7603BB.

11:38AM 14 DO YOU RECALL THAT?

11:38AM 15 A. YES. IS THAT IN THE --

11:38AM 16 Q. I'LL GIVE YOU A SECOND TO TURN TO IT.

11:38AM 17 A. IS IT 7603DD?

11:38AM 18 Q. BB AS IN BOY.

11:38AM 19 A. OKAY.

11:38AM 20 Q. MS. WACHS, CAN WE PUT UP EXHIBIT 1548, PLEASE, AND THE

11:38AM 21 EXCEL CHART THAT IS ALREADY ADMITTED.

11:39AM 22 MS. CHEUNG, DO YOU SEE ON THE SCREEN IN FRONT OF YOU THE

11:39AM 23 DATA FROM THE PROFICIENCY TESTING EXPERIMENT AT THERANOS?

11:39AM 24 A. YES.

11:39AM 25 Q. AND THEN LOOKING AT DEFENSE EXHIBIT 7603BB, DO YOU RECALL

11:39AM 1 DISCUSSING WITH MR. COOPERSMITH SOME GUIDELINES OR MARGINS THAT  
11:39AM 2 THE REGULATION PROVIDES FOR DIFFERENT KINDS OF TESTS?

11:39AM 3 A. YES.

11:39AM 4 Q. AND YOU TESTIFIED ON CROSS THAT THE SPECIFIC TESTS IN THE  
11:39AM 5 REGULATION ARE GENERAL CHEMISTRY AS OPPOSED TO IMMUNOASSAYS; IS  
11:39AM 6 THAT RIGHT?

11:39AM 7 A. THAT IS CORRECT.

11:39AM 8 Q. CAN YOU EXPLAIN WHY THAT MATTERS?

11:39AM 9 A. THAT MATTERS BECAUSE THESE RANGES ARE GENERATED FOR A  
11:39AM 10 DIFFERENT SUBSET OF TESTS, SO THEY HAVE NO RELATION TO THE  
11:39AM 11 DIFFERENT TYPE OF PROFICIENCY TESTING THAT WE'RE RUNNING HERE  
11:39AM 12 FOR THE IMMUNOASSAYS.

11:39AM 13 MR. COOPERSMITH: YOUR HONOR, MOVE TO STRIKE UNDER  
11:39AM 14 702.

11:39AM 15 THE COURT: IS THIS RELATED TO HER -- MAYBE YOU CAN  
11:39AM 16 LAY A FOUNDATION FOR THAT, PLEASE.

11:39AM 17 MR. BOSTIC: SURE.

11:40AM 18 Q. MS. CHEUNG, ARE YOU AWARE THAT -- WELL, LET ME ASK, THE  
11:40AM 19 MARGINS, THE ALLOWABLE MARGINS SET BY THE REGULATIONS, ARE THEY  
11:40AM 20 SPECIFIC TO EACH INDIVIDUAL ASSAY LISTED?

11:40AM 21 MR. COOPERSMITH: YOUR HONOR, OBJECTION. 602, 702.

11:40AM 22 THE COURT: WELL, ARE YOU ASKING IS THIS WHAT SHE  
11:40AM 23 WAS TRAINED?

11:40AM 24 MR. BOSTIC: I THINK IT'S APPARENT FROM THE  
11:40AM 25 DOCUMENT, YOUR HONOR.

11:40AM 1 THE COURT: RIGHT. RIGHT. WHY DON'T YOU LAY THAT  
11:40AM 2 FOUNDATION.

11:40AM 3 BY MR. BOSTIC:

11:40AM 4 Q. MS. CHEUNG, AT THERANOS, DID YOU GAIN AN UNDERSTANDING AS  
11:40AM 5 TO WHETHER THE REGULATIONS IMPOSED SPECIFIC MARGINS OF  
11:40AM 6 ALLOWABLE ERROR FOR EACH SPECIFIC TEST?

11:40AM 7 A. YES.

11:40AM 8 Q. AND WHAT DID YOU COME TO UNDERSTAND FROM YOUR WORK AT  
11:40AM 9 THERANOS?

11:40AM 10 MR. COOPERSMITH: OBJECTION, YOUR HONOR. HEARSAY.

11:40AM 11 THE COURT: OVERRULED.

11:40AM 12 THE WITNESS: THAT -- CAN YOU REPEAT THAT QUESTION?

11:40AM 13 BY MR. BOSTIC:

11:40AM 14 Q. SURE.

11:40AM 15 THE QUESTION WAS WHAT DID YOU LEARN AT THERANOS ABOUT  
11:40AM 16 WHETHER THE REGULATIONS IMPOSED SPECIFIC MARGINS FOR SPECIFIC  
11:41AM 17 TESTS?

11:41AM 18 A. SO FOR SPECIFIC TESTS, THERE WAS A MARGIN THAT WE HAD TO  
11:41AM 19 BE IN OR A STANDARD DEVIATION OF THE ACTUAL AMOUNT FOR SPECIFIC  
11:41AM 20 TYPES OF TESTS.

11:41AM 21 Q. AND IF WE'RE LOOKING AT THE FOUR TESTS THAT WERE INVOLVED  
11:41AM 22 IN THE FEBRUARY 2014 EXPERIMENT --

11:41AM 23 A. YES.

11:41AM 24 Q. -- ARE ANY OF THOSE FOUR TESTS COVERED BY THE REGULATION  
11:41AM 25 THAT MR. COOPERSMITH DISCUSSED WITH YOU?

11:41AM 1 A. NO.

11:41AM 2 Q. EVEN SO, LOOKING AT THE MARGINS OF ALLOWABLE ERROR IN THAT

11:41AM 3 REGULATION, DO YOU RECALL DISCUSSING WITH MR. COOPERSMITH THAT

11:41AM 4 SOME OF THEM ALLOWED FOR DISCREPANCIES, EXCUSE ME, OF UP TO

11:41AM 5 30 PERCENT?

11:41AM 6 A. CORRECT.

11:41AM 7 Q. I'LL ASK YOU AGAIN TO LOOK AT THE RESULTS FROM THE TESTS

11:41AM 8 OF THE THERANOS TECHNOLOGY IN FEBRUARY OF 2014.

11:41AM 9 AND MY QUESTION IS, ARE YOU SEEING DISCREPANCY

11:42AM 10 SIGNIFICANTLY GREATER THAN 30 PERCENT IN THOSE RESULTS?

11:42AM 11 A. YES, YES.

11:42AM 12 Q. ALL RIGHT. CAN YOU HIGHLIGHT SOME OF THOSE FOR US.

11:42AM 13 A. SOME OF THEM ARE HIGHLIGHTED IN LIKE NY E09 ON F, THE

11:42AM 14 MAJORITY OF THE VITAMIN D SAMPLES.

11:42AM 15 ANOTHER EXAMPLE IS NY TM269 ON COLUMN H.

11:42AM 16 Q. SO IF WE LOOK AT, FOR EXAMPLE, THE VITAMIN D RESULTS, AND

11:42AM 17 WE SEE IN F4 THERE'S A RECOVERY THERE OF 373 PERCENT.

11:42AM 18 DO YOU SEE THAT?

11:42AM 19 A. YES.

11:42AM 20 Q. IN ANYWHERE IN THE REGULATION THAT MR. COOPERSMITH SHOWED

11:42AM 21 YOU, IS THERE AN ASSAY WHERE YOU CAN STILL PASS PROFICIENCY

11:42AM 22 TESTING WHILE STILL BEING 2- OR 300 PERCENT OFF OF THE TARGET?

11:43AM 23 A. NO.

11:43AM 24 Q. YOU MENTIONED ALSO IN YOUR CONVERSATION WITH

11:43AM 25 MR. COOPERSMITH THAT THERE WAS A LATER INTERNAL PROFICIENCY

11:43AM 1 TESTING ROUND AT THERANOS; IS THAT RIGHT?

11:43AM 2 A. THAT IS CORRECT.

11:43AM 3 Q. AND YOU TESTIFIED THAT AS A RESULT OF THAT ROUND, TWO OF  
11:43AM 4 THE ASSAYS INVOLVED FAILED AND HAD TO BE TAKEN OUT OF USE; IS  
11:43AM 5 THAT RIGHT?

11:43AM 6 A. THAT IS CORRECT.

11:43AM 7 Q. DO YOU RECALL WHICH TWO ASSAYS THOSE WERE?

11:43AM 8 A. I -- ONE WAS FT4 AND THE OTHER I DON'T REMEMBER AT THIS  
11:43AM 9 TIME.

11:43AM 10 Q. DO YOU RECALL LEARNING OF THAT RESULT DURING YOUR TIME AT  
11:43AM 11 THERANOS?

11:43AM 12 A. YES.

11:43AM 13 Q. AND WERE YOU SURPRISED BY THOSE FAILURES OF THE PT  
11:43AM 14 TESTING?

11:43AM 15 A. NO.

11:43AM 16 Q. WHY NOT?

11:43AM 17 A. BECAUSE --

11:43AM 18 MR. COOPERSMITH: OBJECTION, YOUR HONOR. RELEVANCE.

11:44AM 19 401.

11:44AM 20 THE COURT: THIS IS BASED ON HER WORK AGAIN?

11:44AM 21 MR. BOSTIC: YES, YOUR HONOR.

11:44AM 22 THE COURT: YOU CAN ANSWER THE QUESTION BASED ON  
11:44AM 23 YOUR WORK.

11:44AM 24 THE WITNESS: SO BASED ON MY WORK AT THERANOS, I  
11:44AM 25 WASN'T SURPRISED BY THE RESULTS BECAUSE IT WAS FAIRLY

11:44AM 1 CONSISTENT WITH WHAT WE WERE SEEING IN TERMS OF THE FAILURES OF  
11:44AM 2 THE QUALITY CONTROLS, A LOT OF THE EXPERIMENTAL STUDIES THAT WE  
11:44AM 3 WERE DOING, THAT IN ACTION WHEN WE WERE RUNNING THESE SAMPLES  
11:44AM 4 AND THESE TESTS THAT WE FREQUENTLY SAW THAT THERE WERE GREAT  
11:44AM 5 DEVIATIONS BETWEEN WHAT WAS EXPECTED AND WHAT WAS ACTUALLY  
11:44AM 6 GENERATED.

11:44AM 7 SO IT DIDN'T SURPRISE ME THAT WHEN WE HAD DONE THE  
11:44AM 8 PROFICIENCY TESTING BASED ON THE ALTERNATIVE ASSESSMENT, OR THE  
11:44AM 9 SOP THAT WE JUST WENT THROUGH WITH MR. COOPERSMITH, THAT THESE  
11:44AM 10 WERE NOT FUNCTIONING TO THE STANDARD IN WHICH THERANOS SET FOR  
11:44AM 11 ITSELF.

11:44AM 12 BY MR. BOSTIC:

11:44AM 13 Q. MR. COOPERSMITH ASKED YOU A QUESTION ABOUT THE ACCURACY OF  
11:44AM 14 PATIENT RESULTS.

11:44AM 15 DO YOU RECALL THAT QUESTION?

11:44AM 16 A. YES.

11:44AM 17 Q. HE ASKED YOU SOMETHING LIKE ARE YOU AWARE OF ANY RESULTS  
11:45AM 18 THAT ACTUALLY WENT OUT TO PATIENTS THAT ARE INACCURATE?

11:45AM 19 A. CORRECT.

11:45AM 20 Q. AND I THINK YOU TESTIFIED THAT YOU WERE NOT AWARE OF ANY  
11:45AM 21 SPECIFIC RESULTS THAT WERE INACCURATE; IS THAT RIGHT?

11:45AM 22 A. OH. YES.

11:45AM 23 Q. AND I JUST WANT TO MAKE IT CLEAR, IS THAT YOUR TESTIMONY  
11:45AM 24 TODAY?

11:45AM 25 A. YES.

11:45AM 1           THERE IS, IN RETROSPECT, ONE OF THEM THAT I KNOW WE MADE A  
11:45AM 2           MISTAKE ON, WHICH IS THE THANKSGIVING SAMPLE.

11:45AM 3           Q.    OKAY.  CAN YOU DESCRIBE THE CIRCUMSTANCES OF THAT ONE?

11:45AM 4           A.    SO THE THANKSGIVING SAMPLE WAS ESSENTIALLY WE WERE HAVING  
11:45AM 5           A BUNCH OF QUALITY CONTROL FAILURES, AND WE DISCUSSED IT IN THE  
11:45AM 6           TESTIMONY, WITH NORMANDY.

11:45AM 7           ESSENTIALLY I REPORTED TO NORMANDY 911 THAT THERE WERE  
11:45AM 8           ISSUES WITH THE QUALITY CONTROLS PASSING.

11:45AM 9           BUT WHAT WE HAD FOUND OUT IS ACTUALLY THAT THERE WERE  
11:45AM 10          EXPIRED REAGENTS, AND THE QUALITY CONTROLS HAD CONSISTENTLY  
11:45AM 11          FAILED FOR WEEKS ON END AFTER THAT PARTICULAR SAMPLE.

11:46AM 12          SO THERE WAS THE INSTANCE THAT WE HAD KNOWN THAT THERE  
11:46AM 13          WERE ERRORS EFFECTIVELY HAPPENING IN THE LABORATORY, WHETHER IT  
11:46AM 14          WAS I NEEDED TO BE RETRAINED, WHETHER IT WAS REAGENTS, THERE  
11:46AM 15          WERE NUMEROUS ERRORS, BUT THEY STILL HAD GIVEN THE PATIENT THAT  
11:46AM 16          SAMPLE DESPITE US KNOWING INTERNALLY THAT WE HAD ALL OF THESE  
11:46AM 17          ISSUES.

11:46AM 18          Q.    WHEN IT COMES TO QUALITY CONTROL TESTS, CAN YOU JUST  
11:46AM 19          SUMMARIZE FOR US HOW YOU WERE ABLE TO TELL WHETHER THE THERANOS  
11:46AM 20          MACHINE IS PRODUCING THE CORRECT RESULT OR NOT?

11:46AM 21          A.    WHETHER THERANOS IS PRODUCING THE CORRECT RESULTS OR NOT?

11:46AM 22          Q.    YES, FOR A QUALITY CONTROL TEST?

11:46AM 23          A.    FOR A QUALITY CONTROL?

11:46AM 24          SO WE SET -- ESSENTIALLY FOR THE QUALITY CONTROL WE KNOW  
11:46AM 25          WHAT THE CONCENTRATION IS AND BASED ON IMPLEMENTING OR

11:46AM 1 INSERTING THE DATA THAT WE GENERATE FROM RUNNING THE  
11:46AM 2 EXPERIMENT, THERANOS WILL GENERATE A PASS OR A FAIL INDICATION  
11:46AM 3 TO LET US KNOW AS CLINICAL LAB SCIENTISTS WHETHER IT PASSES OR  
11:46AM 4 IT FAILS.

11:47AM 5 SO IT'S JUST BASICALLY IF THE ACTUAL RAN RESULT DOESN'T  
11:47AM 6 COME WITHIN THAT STANDARD DEVIATION RANGE, IT WILL, IT WILL  
11:47AM 7 FAIL. SO THAT'S HOW WE GENERATE THE QUALITY CONTROL  
11:47AM 8 INFORMATION.

11:47AM 9 Q. SO, IN OTHER WORDS, YOU CAN CHECK THE ACCURACY OF THE  
11:47AM 10 ANSWER BECAUSE YOU ALREADY KNOW WHAT THE RIGHT ANSWER IS?

11:47AM 11 A. THAT IS CORRECT.

11:47AM 12 Q. CAN YOU DO THAT SAME THING WITH A PATIENT TEST?

11:47AM 13 A. NO.

11:47AM 14 Q. AS PART OF YOUR JOB AT THERANOS, WERE YOU RESPONSIBLE IN  
11:47AM 15 ANY WAY FOR INTERFACING WITH PATIENTS OR DOCTORS WHO MIGHT HAVE  
11:47AM 16 HAD CONCERNS ABOUT THE ACCURACY OF THERANOS'S TESTS?

11:47AM 17 A. NO.

11:47AM 18 Q. SO IN ANSWERING MR. COOPERSMITH'S QUESTION, YOU WOULDN'T  
11:47AM 19 BE ABLE TO DRAW FROM ANY KNOWLEDGE FROM THAT; IS THAT CORRECT?

11:47AM 20 A. THAT IS CORRECT.

11:47AM 21 Q. DURING YOUR TIME AT THERANOS, WERE YOU CONFIDENT IN THE  
11:47AM 22 ACCURACY OF THE RESULTS THAT WERE BEING SENT OUT TO PATIENTS?

11:47AM 23 A. NO.

11:48AM 24 Q. WHY NOT?

11:48AM 25 A. JUST BECAUSE EVERY TIME WE WOULD RUN AN EXPERIMENT WHERE



11:48AM 1 WE KNEW THE CONCENTRATION OF WHAT THE EDISON -- WE KNEW THE  
11:48AM 2 CONCENTRATION OF WHATEVER THE TEST THAT WE WERE SEARCHING,  
11:48AM 3 WHETHER IT WAS VITAMIN D OR PSA, THERE WAS MAJOR VARIABILITY,  
11:48AM 4 WHETHER THAT WAS FROM OUR IN-HOUSE SAMPLES OR THE SAMPLES WE  
11:48AM 5 GENERATED AND COMPARING IT TO THE IMMULITE AND COMPARING IT TO  
11:48AM 6 THE EDISONS, WHETHER IT WAS THE QUALITY CONTROLS AND THE FACT  
11:48AM 7 THAT THEY WERE FAILING ALL OF THE TIME, WHICH IS VERY  
11:48AM 8 SUGGESTIVE THAT, SURE, THEY MAY HAVE PASSED SOMETIMES BUT MAYBE  
11:48AM 9 THAT WAS JUST NOISE. IT WASN'T EVEN THE CASE THAT IT WAS A  
11:48AM 10 REAL ACTUAL RESULT.

11:48AM 11 FROM ALL OF THOSE, LIKE, A HUGE ACCUMULATION OF EVIDENCE  
11:48AM 12 BASED ON WHAT WE WERE ACTIVELY DOING IN THE CLINICAL LAB, IT  
11:48AM 13 WAS REALLY SUGGESTIVE TO ME THAT THESE EDISON DEVICES  
11:48AM 14 SPECIFICALLY WERE NOT PRODUCING VERY RELIABLE OR ACCURATE  
11:48AM 15 RESULTS.

11:48AM 16 Q. MR. COOPERSMITH ASKED YOU ABOUT WHETHER YOU WERE AWARE  
11:49AM 17 THAT ALL LABS HAD SOME LEVEL OF ERROR.

11:49AM 18 DO YOU RECALL THAT QUESTION?

11:49AM 19 A. I RECALL THAT.

11:49AM 20 Q. AND I THINK HE SAID, AND YOU AGREED, THAT ANY HUMAN  
11:49AM 21 ENDEAVOR, I THINK HE SAID, WILL NECESSARILY INVOLVE SOME ERROR;  
11:49AM 22 IS THAT RIGHT?

11:49AM 23 A. THAT IS CORRECT.

11:49AM 24 Q. AND WERE YOU AWARE OF THAT WHEN YOU WERE WORKING AT  
11:49AM 25 THERANOS?

11:49AM 1 A. I WAS AWARE OF THAT.

11:49AM 2 Q. AND WAS THAT KNOWLEDGE ANY COMFORT TO YOU WHEN YOU WERE  
11:49AM 3 CONCERNED ABOUT THE ACCURACY OF THE RESULTS THAT THERANOS WAS  
11:49AM 4 PUTTING OUT?

11:49AM 5 A. NO.

11:49AM 6 Q. MR. COOPERSMITH ASKED YOU SOME QUESTIONS ABOUT THERANOS  
11:49AM 7 LABORATORY INFORMATION SYSTEM.

11:49AM 8 DO YOU RECALL THAT?

11:49AM 9 A. YES.

11:49AM 10 Q. AND HE ASKED YOU WHETHER IT WAS A COMPREHENSIVE TROVE OF  
11:49AM 11 INFORMATION TESTS; IS THAT RIGHT?

11:49AM 12 A. THAT'S RIGHT.

11:49AM 13 Q. AND YOU TESTIFIED ON CROSS ABOUT SOME CATEGORIES OF  
11:49AM 14 INFORMATION THAT WEREN'T IN THE LIS OR WEREN'T CONSISTENTLY IN  
11:49AM 15 THE LIS?

11:50AM 16 A. CORRECT.

11:50AM 17 Q. CAN YOU EXPLAIN THAT?

11:50AM 18 A. SO THE LIS SYSTEM GOT IMPLEMENTED LATER ON, LIKE AFTER I  
11:50AM 19 HAD BEEN WORKING THERE FOR A WHILE.

11:50AM 20 SO THE MAJORITY OF THE INFORMATION THAT WAS INPUTTED THERE  
11:50AM 21 WAS JUST THE PATIENT RESULTS, BUT WE HAD NUMEROUS SPREADSHEETS  
11:50AM 22 THAT WOULD ESSENTIALLY HAVE THE QUALITY CONTROL INFORMATION,  
11:50AM 23 SOMETIMES EVEN THE PATIENT RESULTS, SO WHETHER IT GOT INSERTED  
11:50AM 24 INTO THE LIS SYSTEM I CAN'T BE CERTAIN. I'M NOT TOO SURE.

11:50AM 25 BUT IT WAS JUST BECAUSE THINGS WERE SO MANUALLY DONE, IT

11:50AM 1 WAS HARD TO SAY WHAT WAS PUT IN THERE AND WHAT WASN'T.

11:50AM 2 THE ONLY THING WE KNEW FOR CERTAIN WAS THE PATIENT RESULT  
11:50AM 3 IN THE CLS, WHO ESSENTIALLY SENT OUT THAT PATIENT RESULT,  
11:50AM 4 BECAUSE WE HAD TO PUT THAT IN THERE IN ORDER TO SEND OFF THE  
11:50AM 5 INFORMATION TO THE PATIENT.

11:50AM 6 Q. WE TALKED A MINUTE AGO ABOUT HOW TO IDENTIFY OR THE EASE  
11:51AM 7 OR DIFFICULTY OF IDENTIFYING AN INACCURATE PATIENT RESULT.

11:51AM 8 DO YOU RECALL THAT?

11:51AM 9 A. YES.

11:51AM 10 Q. DID THE LIS DATABASE CONTAIN INDICATORS OF WHAT PATIENT  
11:51AM 11 RESULTS WERE ACCURATE AND WHICH WERE INACCURATE?

11:51AM 12 A. NO.

11:51AM 13 Q. WOULD THAT HAVE BEEN POSSIBLE GIVEN THE FORMAT OF THE LIS  
11:51AM 14 AND THE INFORMATION AVAILABLE?

11:51AM 15 MR. COOPERSMITH: OBJECTION. SORRY. OBJECTION.

11:51AM 16 602.

11:51AM 17 THE COURT: CALLS FOR HER PERSONAL KNOWLEDGE.

11:51AM 18 MR. BOSTIC: YES, YOUR HONOR.

11:51AM 19 THE COURT: REPHRASE THE QUESTION WITH THAT.

11:51AM 20 BY MR. BOSTIC:

11:51AM 21 Q. BASED ON YOUR EXPERIENCE AND KNOWLEDGE OF WHAT THE LIS  
11:51AM 22 CONTAINED, WOULD IT HAVE BEEN POSSIBLE FOR THE LIS TO INDICATE  
11:51AM 23 FOR EACH PATIENT RESULT WHETHER IT WAS ACCURATE OR INACCURATE?

11:51AM 24 A. NO.

11:51AM 25 Q. MR. COOPERSMITH ASKED YOU FOR YOUR OPINIONS ABOUT A COUPLE

11:51AM 1 OF YOUR COWORKERS.

11:51AM 2 DO YOU REMEMBER THAT?

11:51AM 3 A. YES.

11:51AM 4 Q. I THINK IN PARTICULAR HE ASKED YOU ABOUT WHETHER YOU  
11:52AM 5 RESPECTED SOME OF THEM OR HELD THEM IN HIGH REGARD; IS THAT  
11:52AM 6 RIGHT?

11:52AM 7 A. THAT IS CORRECT.

11:52AM 8 Q. AND GENERALLY SPEAKING, THERE WERE PEOPLE AT THERANOS THAT  
11:52AM 9 YOU ADMIRE AND WORKED WELL WITH; IS THAT RIGHT?

11:52AM 10 A. THAT IS CORRECT.

11:52AM 11 Q. AT ONE POINT MR. COOPERSMITH ASKED YOU, I THINK IT WAS AS  
11:52AM 12 TO DR. SIVARAMAN --

11:52AM 13 A. YES.

11:52AM 14 Q. -- WHETHER YOU BELIEVED THAT DR. SIVARAMAN WAS INVOLVED IN  
11:52AM 15 SOMETHING FRAUDULENT.

11:52AM 16 DO YOU RECALL THAT QUESTION?

11:52AM 17 A. I DO RECALL THAT QUESTION.

11:52AM 18 Q. I THINK YOUR ANSWER WAS NO?

11:52AM 19 A. YES.

11:52AM 20 Q. MR. BALWANI'S LAWYER, THOUGH, DIDN'T ASK YOU ABOUT THAT  
11:52AM 21 SAME QUESTION AND WHETHER YOU BELIEVED THAT FOR THE ACTUAL  
11:52AM 22 DEFENDANTS IN THIS CASE, MR. BALWANI OR MS. HOLMES; ISN'T THAT  
11:52AM 23 RIGHT?

11:52AM 24 A. THAT'S CORRECT.

11:52AM 25 Q. YOU ALSO DISCUSSED WITH MR. BALWANI THE OBLIGATIONS THAT

11:52AM 1 YOU WERE UNDER AS PART OF YOUR EMPLOYMENT AGREEMENT WITH  
11:52AM 2 THERANOS.

11:52AM 3 DO YOU REMEMBER THAT?

11:52AM 4 A. YES.

11:52AM 5 Q. AND IN PARTICULAR HE HIGHLIGHTED THE OBLIGATIONS THAT YOU  
11:52AM 6 WERE UNDER NOT TO SHARE CONFIDENTIAL COMPANY INFORMATION WITH  
11:52AM 7 THOSE OUTSIDE OF THE COMPANY; ISN'T THAT RIGHT?

11:52AM 8 A. THAT IS CORRECT.

11:52AM 9 Q. DID YOU UNDERSTAND THOSE OBLIGATIONS?

11:52AM 10 A. I DID.

11:53AM 11 Q. WERE YOU AWARE OF THOSE OBLIGATIONS WHEN YOU MADE THE  
11:53AM 12 DECISIONS TO SPEAK TO A REPORTER ABOUT THERANOS AND TO REPORT  
11:53AM 13 THERANOS ACTIVITIES TO THE AUTHORITIES?

11:53AM 14 MR. COOPERSMITH: YOUR HONOR, OBJECTION. BEYOND THE  
11:53AM 15 SCOPE.

11:53AM 16 THE COURT: OVERRULED.

11:53AM 17 BY MR. BOSTIC:

11:53AM 18 Q. WOULD YOU LIKE THE QUESTION AGAIN?

11:53AM 19 A. YES, I WAS AWARE.

11:53AM 20 Q. THE QUESTION WAS, WERE YOU AWARE OF THOSE OBLIGATIONS WHEN  
11:53AM 21 YOU DECIDED FIRST TO SPEAK TO A REPORTER ABOUT THERANOS AND  
11:53AM 22 THEN TO GO TO AUTHORITIES ABOUT THERANOS?

11:53AM 23 A. YES.

11:53AM 24 Q. SO MY QUESTION THEN IS WHY DID YOU MAKE THOSE DECISIONS?  
11:53AM 25 WHY DID YOU DECIDE TO SPEAK ABOUT WHAT YOU HAD SEEN AT

11:53AM 1 THERANOS KNOWING ABOUT THOSE LEGAL OBLIGATIONS?

11:53AM 2 MR. COOPERSMITH: OBJECTION, YOUR HONOR. 401. 403.

11:53AM 3 THE COURT: MR. BOSTIC.

11:53AM 4 MR. BOSTIC: I THINK THE DEFENSE HAS OPENED THE DOOR  
11:53AM 5 TO THIS. THEY HAVE ASKED HER ABOUT THOSE OBLIGATIONS. I THINK  
11:53AM 6 SHE SHOULD BE ENTITLED TO EXPLAIN WHY SHE DID WHAT SHE DID.

11:54AM 7 THE COURT: I'LL OVERRULE THE OBJECTION.

11:54AM 8 YOU CAN ANSWER THE QUESTION.

11:54AM 9 THE WITNESS: I CAN ANSWER THE QUESTION?

11:54AM 10 SO CAN YOU JUST REPEAT IT FOR ME.

11:54AM 11 BY MR. BOSTIC:

11:54AM 12 Q. YES. THE QUESTION WAS SINCE YOU KNEW ABOUT THOSE  
11:54AM 13 OBLIGATIONS UNDER YOUR AGREEMENT, WHY DID YOU DECIDE TO REVEAL  
11:54AM 14 INFORMATION ABOUT WHAT YOU HAD SEEN AT THERANOS TO THE PRESS  
11:54AM 15 AND TO THE AUTHORITIES?

11:54AM 16 MR. COOPERSMITH: SAME OBJECTION.

11:54AM 17 THE WITNESS: SO I DECIDED TO REPORT TO THE MEDIA  
11:54AM 18 AND TO REGULATORS BECAUSE I FELT IT WAS IMPORTANT IN THAT  
11:54AM 19 THERANOS HAD GONE TO EXTREME LENGTHS TO HIDE THE FACT THAT  
11:54AM 20 THERE WERE DEFICIENCIES IN THE PATIENT PROCESSING LAB THAT WERE  
11:54AM 21 OCCURRING WHILE PEOPLE WERE ACTIVELY PROCESSING PATIENT  
11:54AM 22 SAMPLES. IT WAS REALLY TO JUST NOTIFY PEOPLE ABOUT THE TRUTH  
11:54AM 23 OF WHAT WAS OCCURRING AND WHAT WAS HAPPENING.

11:54AM 24 AND THERE WAS EVEN SOME ASPECT, IN TERMS OF PULLING IN THE  
11:54AM 25 REGULATORS, FOR THEM TO REALIZE MAYBE I WAS WRONG, MAYBE THERE

11:54AM 1 WAS SOMETHING THAT I WASN'T SEEING. SO AT LEAST PEOPLE WHO HAD  
11:55AM 2 THE QUALIFICATIONS COULD UNDERSTAND THE TRUTH OF WHAT WAS GOING  
11:55AM 3 ON, BECAUSE BASED ON MY EXPERIENCE WORKING FOR THE COMPANY, WE  
11:55AM 4 HAD DONE A LOT TO DECEIVE REGULATORS ON WHAT WE WERE ACTUALLY  
11:55AM 5 USING TO TEST ON PATIENTS, WHAT THE STANDARDS WE WERE ENGAGED  
11:55AM 6 IN IN TERMS OF PATIENT PROCESSING, AND I JUST FELT THAT DESPITE  
11:55AM 7 THE RISK AND DESPITE THE FACT THAT I KNEW THAT THERE COULD BE  
11:55AM 8 CONSEQUENCES FOR THE FACT THAT I HAD SPOKE FORWARD, THAT PEOPLE  
11:55AM 9 JUST REALLY NEEDED TO SEE THE TRUTH OF WHAT WAS HAPPENING  
11:55AM 10 BEHIND CLOSED DOORS.

11:55AM 11 Q. THANK YOU, MS. CHEUNG.

11:55AM 12 NO FURTHER QUESTIONS.

11:55AM 13 THE COURT: RECROSS?

11:55AM 14 **RECROSS-EXAMINATION**

11:55AM 15 BY MR. COOPERSMITH:

11:56AM 16 Q. MS. CHEUNG, I THINK WE'RE AT THE TAIL END HERE, RECROSS.

11:56AM 17 SO I JUST WANT TO FOLLOW UP ON A FEW THINGS THAT

11:56AM 18 MR. BOSTIC ASKED YOU ABOUT IF THAT'S OKAY.

11:56AM 19 A. OKAY.

11:56AM 20 Q. SO, FIRST OF ALL, WE HAVE THIS ANALOGY GOING ABOUT

11:56AM 21 IPHONES, RIGHT?

11:56AM 22 AND YOU SAID THAT -- WE'RE USING THE ANALOGY TO TALK ABOUT

11:56AM 23 HOW A COMPANY COULD BE SELLING A PRODUCT, SUCH AS AN IPHONE 11,

11:56AM 24 BUT WORKING ON ADDITIONAL PRODUCTS; RIGHT?

11:56AM 25 A. CORRECT.

11:56AM 1 Q. AND I THINK YOU SAID, WHEN MR. BOSTIC WAS JUST ASKING YOU  
11:56AM 2 QUESTIONS, THAT YOU THOUGHT IT WOULD BE LIKE THE IPHONES WERE  
11:56AM 3 SHIPPED AND THEY'RE STILL TRYING TO FIX THE IPHONES THAT WERE  
11:56AM 4 SHIPPED; RIGHT?

11:56AM 5 A. YES.

11:56AM 6 Q. BUT DO YOU UNDERSTAND THAT FOR APPLE, USING THE ANALOGY,  
11:57AM 7 THE PRODUCT THAT THEY ARE SELLING IS ACTUALLY THE IPHONE;  
11:57AM 8 RIGHT?

11:57AM 9 A. YES.

11:57AM 10 Q. AND THAT FOR THERANOS, THE PRODUCT THEY'RE SELLING IS NOT  
11:57AM 11 THE BLOOD TESTING DEVICE, IT'S ACTUALLY THE BLOOD TEST AND  
11:57AM 12 RESULT; RIGHT?

11:57AM 13 A. THE PATIENT PROCESSING, IS THAT WHAT YOU'RE ASKING?

11:57AM 14 Q. IN OTHER WORDS, WHAT PEOPLE WANT FROM THERANOS, IS THEY'RE  
11:57AM 15 NOT BUYING THE EDISON DEVICE, RIGHT, THEY'RE BUYING THE RESULT  
11:57AM 16 IF THEY'RE BUYING ANYTHING AT ALL; RIGHT?

11:57AM 17 A. YES.

11:57AM 18 Q. SO THE PRODUCT AT THERANOS IS NOT THE DEVICE, IT'S THE  
11:57AM 19 RESULT OF THE TEST; RIGHT?

11:57AM 20 A. I THINK AT THERANOS, BECAUSE IT'S EMERGING TECHNOLOGY,  
11:57AM 21 ISN'T IT A BIT OF BOTH?

11:57AM 22 Q. BOTH? WELL, LET'S JUST TAKE IT A LITTLE BIT -- ONE STEP  
11:57AM 23 AT A TIME.

11:57AM 24 SO IF THERANOS RUNS A BLOOD TEST ON WHATEVER TECHNOLOGY  
11:57AM 25 IT'S USING --



11:57AM 1 A. UH-HUH.

11:57AM 2 Q. -- AND THEN RELEASES THE RESULT TO A PATIENT OR DOCTOR,

11:57AM 3 THAT'S WHAT THE PATIENT OR DOCTOR IS INTERESTED IN; RIGHT?

11:58AM 4 MR. BOSTIC: CALLS FOR SPECULATION.

11:58AM 5 THE COURT: OVERRULED. YOU CAN ANSWER THE QUESTION.

11:58AM 6 THE WITNESS: CAN YOU REPEAT THE QUESTION.

11:58AM 7 BY MR. COOPERSMITH:

11:58AM 8 Q. SURE.

11:58AM 9 WELL, LET'S TAKE IT FROM THE PERSPECTIVE OF A PATIENT.

11:58AM 10 THE PATIENT GOES AND GETS A BLOOD TEST, AND THE SAMPLE IS TAKEN

11:58AM 11 AND SENT TO A LAB, THE SAMPLE IS RUN ON WHATEVER TECHNOLOGY,

11:58AM 12 AND THE RESULT IS OBTAINED, THE RESULT IS SENT TO THE PATIENT

11:58AM 13 OR THE DOCTOR.

11:58AM 14 AT THAT POINT THAT'S WHAT THE -- THAT'S WHAT THEY WANTED,

11:58AM 15 RIGHT? THEY WANTED TO KNOW THE RESULT OF THE BLOOD TEST?

11:58AM 16 A. I THINK THERE ARE TWO THINGS THAT THE PATIENT WANTED.

11:58AM 17 THEY WANTED THE FINGERSTICK USUALLY AND ALSO THE PATIENT

11:58AM 18 RESULT.

11:58AM 19 Q. RIGHT. BUT THEY WANTED -- ULTIMATELY THEY WANTED TO KNOW

11:58AM 20 WHAT THEIR BLOOD, YOU KNOW, TEST RESULT WAS; RIGHT?

11:58AM 21 A. CORRECT.

11:58AM 22 Q. SO THE ACTUAL THING THAT THEY'RE GETTING IS THE RESULT.

11:58AM 23 THEY'RE NOT GETTING AN EDISON MACHINE SHIPPED TO THEIR HOUSE OR

11:58AM 24 THEIR OFFICE; RIGHT?

11:58AM 25 A. NO.

11:58AM 1 Q. AND WITH THE APPLE -- WITH AN IPHONE YOU'RE ACTUALLY  
11:59AM 2 GETTING THE PHYSICAL IPHONE; RIGHT?

11:59AM 3 A. YES.

11:59AM 4 Q. SO IF IPHONE -- IF APPLE IN THEIR FACTORY HAD A QUALITY  
11:59AM 5 CONTROL PROCESS AND THEY WERE MANUFACTURING IPHONES, AND, YOU  
11:59AM 6 KNOW, EVERY ONCE IN A WHILE THEY FIND AN IPHONE THAT DOESN'T  
11:59AM 7 WORK, IT WASN'T MANUFACTURED CORRECTLY, THEY TEST IT AND IT  
11:59AM 8 DOESN'T WORK, AS YOU UNDERSTAND THE WAY THE WORLD WORKS, THEY  
11:59AM 9 WOULD TRY NOT TO SELL THAT IPHONE; RIGHT?

11:59AM 10 A. CORRECT.

11:59AM 11 Q. EVERY ONCE IN A WHILE ONE GETS THROUGH ANYWAY; RIGHT?

11:59AM 12 A. YES.

11:59AM 13 Q. BUT IN THIS CASE USING AN ANALOGY, WHEN THERANOS GETS A  
11:59AM 14 QUALITY CONTROL RESULT THAT DOESN'T PASS QUALITY CONTROL, THE  
11:59AM 15 PROTOCOL AT THERANOS IS NOT TO RELEASE THE TEST?

11:59AM 16 A. CORRECT.

11:59AM 17 Q. RIGHT.

11:59AM 18 JUST LIKE AT APPLE, IF AN APPLE IPHONE FAILED A QUALITY  
11:59AM 19 CONTROL PROCEDURE WITHIN THEIR MANUFACTURING PROCESS, THE  
11:59AM 20 PROTOCOL YOU WOULD EXPECT, RIGHT, WOULD BE NOT TO SHIP THAT  
11:59AM 21 IPHONE?

11:59AM 22 A. CORRECT.

11:59AM 23 Q. AND SOMETIMES THEY DO BY ACCIDENT; RIGHT?

12:00PM 24 A. CORRECT.

12:00PM 25 Q. OKAY. SO YOU TALKED ABOUT AN EXAMPLE, I THINK YOU CALLED

12:00PM 1 IT THE THANKSGIVING SAMPLES; RIGHT?

12:00PM 2 A. RIGHT.

12:00PM 3 Q. AND YOU THINK THERE WAS AN ISSUE OF SOME RESULTS MIGHT  
12:00PM 4 HAVE BEEN RELEASED BUT THERE WERE EXPIRED REAGENTS?

12:00PM 5 A. YES.

12:00PM 6 Q. AND THE ISSUE WASN'T, AS I UNDERSTAND IT FROM YOUR  
12:00PM 7 TESTIMONY, IT WAS NOT THE ACTUAL WORKING OF THE DEVICE, IT WAS  
12:00PM 8 THAT UNFORTUNATELY THERE WAS A PROBLEM WITH USING AN EXPIRED  
12:00PM 9 REAGENT; RIGHT?

12:00PM 10 A. IT COULD HAVE BEEN ALL OF THOSE FACTORS.

12:00PM 11 Q. BUT YOUR TESTIMONY JUST A FEW MINUTES AGO WAS IT WAS ABOUT  
12:00PM 12 AN EXPIRED REAGENT?

12:00PM 13 A. YES, IT WAS --

12:00PM 14 Q. AND WHOEVER IS RUNNING THE SAMPLE, IS SUPPOSED TO CHECK  
12:00PM 15 THE REAGENT PACKAGING TO MAKE SURE IT'S NOT EXPIRING; RIGHT?

12:00PM 16 A. CORRECT.

12:00PM 17 Q. AND SO IF THAT'S HAPPENING, THAT SOUNDS LIKE HUMAN ERROR;  
12:00PM 18 IS THAT FAIR?

12:00PM 19 A. THAT'S FAIR.

12:00PM 20 Q. OKAY. AND THE JOB OF DECIDING WHO TO -- WHEN TO RELEASE  
12:00PM 21 RESULTS OR WHEN IT IS APPROPRIATE TO RELEASE RESULTS OR NOT,  
12:01PM 22 THAT'S THE DECISION OF SOMEONE LIKE A CLS OR EVEN A LAB  
12:01PM 23 DIRECTOR; RIGHT?

12:01PM 24 A. YES.

12:01PM 25 Q. AND IF THEY RELEASED RESULTS THAT SHE SHOULDN'T HAVE, THAT

12:01PM 1 WOULD BE A MISTAKE THAT THEY MADE; RIGHT?

12:01PM 2 A. CORRECT.

12:01PM 3 Q. AND MORE HUMAN ERROR; RIGHT?

12:01PM 4 A. YES.

12:01PM 5 Q. OKAY. LET'S TALK ABOUT LIS FOR A MINUTE BECAUSE

12:01PM 6 MR. BOSTIC MENTIONED THAT.

12:01PM 7 SO YOU'RE NOT -- YOU DIDN'T DEVELOP THE LIS; RIGHT?

12:01PM 8 A. NO.

12:01PM 9 Q. AND SOMETIMES YOU USED IT?

12:01PM 10 A. YES.

12:01PM 11 Q. AND SOMETIMES YOU HAD OCCASION TO LOOK AT IT TO FIND

12:01PM 12 RESULTS OR THINGS LIKE THAT?

12:01PM 13 A. CORRECT.

12:01PM 14 Q. OKAY. BUT YOU DON'T HAVE EXPERTISE IN ALL OF THE WORKINGS

12:01PM 15 AND FEATURES OF THE LIS, DO YOU?

12:01PM 16 A. NO.

12:01PM 17 Q. AND SO WITH RESPECT TO LIS, YOU DO KNOW, THOUGH, THAT

12:01PM 18 THERE WERE PATIENT RESULTS STORED IN THERE?

12:01PM 19 A. YES.

12:01PM 20 Q. AND YOU DO KNOW THAT THERE WERE QUALITY CONTROL RESULTS?

12:01PM 21 A. YES.

12:01PM 22 Q. AND IF YOU WANTED TO LOOK AT THE TREND OF VITAMIN D

12:02PM 23 RESULTS FOR PATIENTS OVER A THREE MONTH PERIOD, YOU COULD HAVE

12:02PM 24 GOTTEN THAT FROM LIS; RIGHT?

12:02PM 25 A. YES.

12:02PM 1 Q. AND IF YOU WANTED TO KNOW ALL OF THE VITAMIN D TESTS THAT  
12:02PM 2 WERE TAKEN THE SAME DAY AS ANOTHER SAMPLE, YOU COULD ALSO TRY  
12:02PM 3 TO FIND THAT IN LIS; RIGHT?

12:02PM 4 A. COULD YOU REPEAT THAT.

12:02PM 5 Q. IF YOU WANTED TO KNOW -- IF A PARTICULAR PATIENT GOT A  
12:02PM 6 VITAMIN D TEST OR ANY TEST ON A PARTICULAR DAY, AND YOU WANTED  
12:02PM 7 TO KNOW ALL OF THE OTHER TESTS THAT WERE DONE THAT DAY FOR THAT  
12:02PM 8 SAME ASSAY, YOU COULD GET THAT FROM LIS?

12:02PM 9 A. CORRECT.

12:02PM 10 Q. AND YOU COULD EVEN FIGURE OUT IF OTHER PATIENTS GOT IT  
12:02PM 11 FROM THE SAME MACHINE?

12:02PM 12 A. I BELIEVE SO, YES.

12:02PM 13 Q. AND FROM THE SAME TECHNICIAN RUNNING THE SAMPLE; RIGHT?

12:02PM 14 A. I BELIEVE SO.

12:02PM 15 Q. AND THAT IF YOU NEEDED MORE INFORMATION, ONCE YOU HAD THE  
12:02PM 16 PATIENT INFORMATION FROM THE LIS, AND YOU NEEDED TO GO OUT INTO  
12:02PM 17 THE WORLD AND GET MORE INFORMATION LIKE MEDICAL RECORDS, YOU  
12:02PM 18 UNDERSTAND THAT THAT IS SOMETHING THAT ANYONE INVESTIGATING  
12:02PM 19 COULD PROBABLY DO; RIGHT?

12:02PM 20 A. I'M NOT SURE.

12:02PM 21 Q. OKAY. YOU'RE NOT AWARE, FOR EXAMPLE, OF THE -- ARE YOU  
12:02PM 22 AWARE OF THE POWER OF THE UNITED STATES ATTORNEY'S OFFICE TO GO  
12:03PM 23 GET MEDICAL RECORDS IF THEY WANT?

12:03PM 24 A. NO.

12:03PM 25 Q. OKAY. AND THAT'S NOT SOMETHING IN YOUR EXPERTISE, EITHER?

12:03PM

1

A. NO.

12:03PM

2

Q. OKAY. AND ARE YOU AWARE OF WHETHER -- IF THE GOVERNMENT

12:03PM

3

WANTED TO INVESTIGATE WHETHER PATIENT RESULTS ARE CORRECT OR

12:03PM

4

NOT, DO YOU THINK THAT THERE'S MUCH OF A RESTRICTION ON WHAT

12:03PM

5

INFORMATION THESE PROSECUTORS COULD GET IF THEY WANTED TO GET

12:03PM

6

IT?

12:03PM

7

MR. BOSTIC: YOUR HONOR, FOUNDATION, RELEVANCE.

12:03PM

8

MR. COOPERSMITH: I THINK THEY OPENED THE DOOR,

12:03PM

9

YOUR HONOR.

12:03PM

10

THE COURT: SUSTAINED.

12:03PM

11

BY MR. COOPERSMITH:

12:03PM

12

Q. LET'S TALK ABOUT YOUR INTERACTION WITH A JOURNALIST.

12:03PM

13

SO THE JOURNALIST IN QUESTION IS MR. CARREYROU; IS THAT

12:03PM

14

RIGHT?

12:03PM

15

A. THAT IS CORRECT.

12:03PM

16

Q. AND AT THE TIME HE WAS A REPORTER FOR "THE

12:03PM

17

WALL STREET JOURNAL"; IS THAT RIGHT?

12:03PM

18

A. THAT'S CORRECT.

12:03PM

19

Q. AND YOU DON'T KNOW WHAT MR. CARREYROU'S MOTIVES WERE AT

12:03PM

20

THE TIME; RIGHT?

12:03PM

21

A. NO.

12:03PM

22

Q. AND YOU DON'T KNOW, FOR EXAMPLE, WHETHER HE HAD FINANCIAL

12:04PM

23

MOTIVES?

12:04PM

24

A. NO.

12:04PM

25

Q. AND YOU DON'T KNOW, FOR EXAMPLE, WHETHER HE WAS INTERESTED

12:04PM 1 IN TELLING A BIG STORY AND SELLING MOVIE RIGHTS, FOR EXAMPLE?

12:04PM 2 A. NO, I DIDN'T KNOW.

12:04PM 3 Q. AND THAT WAS 17 MONTHS AFTER YOU LEFT THERANOS THAT YOU  
12:04PM 4 TALKED TO HIM?

12:04PM 5 A. I THINK SO.

12:04PM 6 Q. AND IN ALL OF THAT TIME WHEN YOU LEFT THERANOS IN APRIL OF  
12:04PM 7 2014 UNTIL YOU TALKED TO MR. CARREYROU SOME TIME IN 2015, YOU  
12:04PM 8 WEREN'T WORKING AT THERANOS AT THAT POINT; RIGHT?

12:04PM 9 A. NO.

12:04PM 10 Q. SO YOU WEREN'T PRIVY TO EVERYTHING GOING ON THERE?

12:04PM 11 A. I WAS STILL FRIENDS WITH A LOT OF PEOPLE, SO I UNDERSTOOD  
12:04PM 12 AT LEAST THINGS THAT WERE HAPPENING IN THE -- WITH THE EDISONS.

12:04PM 13 Q. OKAY. OKAY.

12:04PM 14 BUT YOU WEREN'T, LIKE, PRIVY TO EVERYTHING THAT THEY WERE  
12:04PM 15 DOING WITH IMPROVEMENTS AND WHAT QUALITY CONTROL WORK WAS BEING  
12:04PM 16 DONE, OR NOT BEING DONE, OR ANYTHING LIKE THAT; RIGHT?

12:04PM 17 A. NO.

12:04PM 18 Q. OKAY. AND MR. CARREYROU WAS NOT A REGULATOR; RIGHT?

12:04PM 19 A. NO.

12:04PM 20 Q. AND YOU UNDERSTAND THAT -- LIKE MR. CARREYROU WOULD HAVE  
12:05PM 21 BEEN FREE TO PUBLISH ANY TRADE SECRETS THAT HE WANTED; RIGHT?

12:05PM 22 A. I DON'T KNOW.

12:05PM 23 Q. AND THE COMPANY HAD NO WAY TO KNOW WHAT INFORMATION YOU  
12:05PM 24 WERE PROVIDING TO MR. CARREYROU?

12:05PM 25 A. THAT IS CORRECT.

12:05PM 1 Q. BECAUSE YOU WEREN'T RETURNING THE HUMAN RESOURCES  
12:05PM 2 DIRECTOR'S CALLS; RIGHT?  
12:05PM 3 A. THAT IS CORRECT.  
12:05PM 4 Q. OKAY. LET'S GO TO EXHIBIT 1431, WHICH YOU SAW ON REDIRECT  
12:05PM 5 JUST NOW.  
12:05PM 6 IF WE CAN PUT THAT UP ON THE SCREEN AND GO IN PARTICULAR  
12:05PM 7 TO PAGE 2 OF THE EXHIBIT.  
12:05PM 8 THERE'S A REFERENCE ON THAT PAGE 2 TO A PERSON NAMED  
12:05PM 9 KARTHIK.  
12:05PM 10 DO YOU SEE THAT?  
12:05PM 11 A. YES.  
12:05PM 12 Q. AND DID YOU KNOW KARTHIK?  
12:05PM 13 A. I DID.  
12:06PM 14 Q. AND WHO WAS THAT?  
12:06PM 15 A. KARTHIK WAS ONE OF THE BIOSTATICIANS THAT WORKED AT  
12:06PM 16 THERANOS.  
12:06PM 17 Q. BIOSTATISTICIAN?  
12:06PM 18 A. YEAH.  
12:06PM 19 Q. AND I PROBABLY MISPRONOUNCED THAT.  
12:06PM 20 SO KARTHIK WAS SOMEONE WHO WORKED IN DANIEL YOUNG'S GROUP?  
12:06PM 21 A. YES.  
12:06PM 22 Q. AND THAT WAS A GROUP OF BIOSTATISTIANS; RIGHT?  
12:06PM 23 A. YES.  
12:06PM 24 Q. AND THEIR JOB WAS TO FIGURE OUT THINGS LIKE OUTLIER  
12:06PM 25 REMOVAL AND ALGORITHMS FOR OUTLIER REMOVAL AND THINGS LIKE



12:06PM 1 THAT?

12:06PM 2 A. CORRECT.

12:06PM 3 Q. AND OTHER STATISTICAL PROJECTS; RIGHT?

12:06PM 4 A. THAT IS CORRECT.

12:06PM 5 Q. YOU TESTIFIED, WHEN MR. BOSTIC WAS ASKING YOU QUESTIONS A

12:06PM 6 FEW MINUTES AGO, THAT YOU DIDN'T HAVE A CLEAR IDERE ABOUT HOW

12:06PM 7 THEY WERE GOING ABOUT REMOVING OUTLIERS?

12:06PM 8 A. THAT THERE WAS NO STANDARD PROTOCOL IN TERMS OF WHAT WAS

12:06PM 9 CONSIDERED AN OUTLIER AND WHAT WASN'T CONSIDERED AN OUTLIER.

12:06PM 10 Q. OKAY. BUT YOU DON'T KNOW, DO YOU, WHAT DR. ROSENDORFF, OR

12:07PM 11 DR. SIVARAMAN, OR DR. YOUNG, OR ANYONE ELSE WAS THINKING WHEN

12:07PM 12 THEY MADE DECISIONS TO REMOVE OUTLIERS; RIGHT?

12:07PM 13 A. NO.

12:07PM 14 Q. AND YOU DON'T KNOW WHETHER THEY HAD A METHOD IN MIND WHEN

12:07PM 15 THEY WERE DOING THAT; RIGHT?

12:07PM 16 A. I, I -- AT LEAST WHEN I WAS WORKING THERE, THERE WAS

12:07PM 17 DISCUSSION OF THAT. IT WASN'T CLEAR ON WHAT THIS METHOD WAS.

12:07PM 18 Q. IT WASN'T CLEAR TO YOU?

12:07PM 19 A. IT WASN'T CLEAR EVEN TO ADAM AT A PERIOD IN TIME WHAT THAT

12:07PM 20 METHOD WAS.

12:07PM 21 Q. BUT YOU DON'T KNOW WHAT ADAM -- I MEAN, HE APPROVED IT;

12:07PM 22 RIGHT?

12:07PM 23 A. I'M NOT SURE.

12:07PM 24 Q. WELL, WE SAW EMAILS WHERE HE APPROVED IT?

12:07PM 25 A. YEAH.

12:07PM 1 Q. OKAY. ON REDIRECT MR. BOSTIC SHOWED YOU AN EXHIBIT WHICH  
12:07PM 2 WAS THE 2013 PROFICIENCY TESTING MANUAL, PROFICIENCY TESTING  
12:07PM 3 MANUAL FROM THE COLLEGE OF AMERICAN PATHOLOGISTS?

12:07PM 4 A. CORRECT.

12:07PM 5 Q. AND THAT'S EXHIBIT, FOR THE RECORD, 20451. OKAY.

12:08PM 6 A. YES.

12:08PM 7 Q. IF YOU COULD TAKE A LOOK AT THAT, I WOULD APPRECIATE IT.

12:08PM 8 A. YEAH, I SEE IT.

12:08PM 9 MR. COOPERSMITH: YOUR HONOR, BECAUSE THE GOVERNMENT  
12:08PM 10 HAD THE WITNESS TALK ABOUT WHAT IT SAID OR DIDN'T SAY, I WOULD  
12:08PM 11 ACTUALLY LIKE TO ADMIT PAGE 14, THE SPECIFIC PART ABOUT OUTLIER  
12:08PM 12 DETECTION THAT WAS REFERRED TO BY THE GOVERNMENT.

12:08PM 13 THE COURT: AND REDACT THE COLUMN ON THE RIGHT AND  
12:08PM 14 ALL OF THE COLUMN ON THE LEFT SAVE FOR THAT PARAGRAPH.

12:08PM 15 MR. COOPERSMITH: YES, YOUR HONOR. I WOULD ALSO  
12:08PM 16 LIKE TO KEEP THE VERY FIRST PAGE OF THAT EXHIBIT SO WE CAN  
12:08PM 17 ORIENT WHAT IT IS.

12:08PM 18 THE COURT: THE COVER PAGE?

12:08PM 19 MR. COOPERSMITH: THE COVER PAGE, YES, YOUR HONOR.

12:08PM 20 MR. BOSTIC: NO OBJECTION, YOUR HONOR, TO THAT  
12:08PM 21 PARAGRAPH AND THE COVER PAGE.

12:08PM 22 THE COURT: SO PAGE 14, THAT ONE PARAGRAPH THAT IS  
12:08PM 23 TITLED "OUTLIER DETECTION TECHNIQUE," WILL BE ADMITTED.  
12:08PM 24 EVERYTHING ELSE WILL BE REDACTED.

12:08PM 25 AND THE COVER PAGE, WHICH IS PAGE 1 OF THE EXHIBIT, WILL

12:09PM 1 BE ADMITTED WITH NO REDACTIONS, AND IT MAY BE PUBLISHED.

12:09PM 2 MR. COOPERSMITH: THANK YOU, YOUR HONOR.

12:09PM 3 (DEFENDANT'S EXHIBIT 20451, PAGE 1 AND PAGE 14 (ONE  
12:09PM 4 PARAGRAPH) WAS RECEIVED IN EVIDENCE.)

12:09PM 5 MR. COOPERSMITH: THANK YOU, YOUR HONOR.

12:09PM 6 MR. ALLEN, CAN YOU MAKE THOSE REDACTIONS. HE ALREADY HAS.

12:09PM 7 Q. IF YOU CAN SHOW THE COVER PAGE FIRST.

12:09PM 8 A. YES.

12:09PM 9 Q. THAT IS THE COVER PAGE YOUR ARE LOOKING AT, MS. CHEUNG, ON  
12:09PM 10 THE SCREEN?

12:09PM 11 A. YES.

12:09PM 12 Q. AND DO YOU SEE ON THE BOTTOM IT SAYS COLLEGE OF AMERICAN  
12:09PM 13 PATHOLOGISTS, AND THEN IT'S A 2013 PROFICIENCY TESTING MANUAL?

12:09PM 14 A. THAT IS CORRECT.

12:09PM 15 Q. AND THEN IF YOU GO TO THE PAGE THAT WE HAVE AVAILABLE.

12:09PM 16 I BELIEVE YOU TESTIFIED ON REDIRECT THAT THIS METHODOLOGY  
12:09PM 17 OF REMOVING OUTLIERS OR EXCLUDING OUTLIERS WAS NOT WHAT  
12:09PM 18 THERANOS WAS DOING?

12:09PM 19 A. THAT IS CORRECT.

12:09PM 20 Q. OKAY. CAN YOU SHOW ME IN THIS PARAGRAPH WHERE IT  
12:09PM 21 DESCRIBES THE METHOD OF REMOVING OUTLIERS?

12:09PM 22 A. THE METHOD?

12:09PM 23 Q. YEAH.

12:09PM 24 A. IN -- CAN YOU ELABORATE ON WHAT YOU MEAN BY THE METHOD.

12:10PM 25 Q. SURE.

12:10PM 1 AS I UNDERSTAND YOUR TESTIMONY A FEW MINUTES AGO ON  
12:10PM 2 REDIRECT, MR. BOSTIC WAS ASKING YOU, AGAIN, WITHOUT SHOWING YOU  
12:10PM 3 THE DOCUMENT, YOU SAID, READING THE WORDS ON THE PAGE, YOU  
12:10PM 4 DIDN'T THINK THAT WHAT IS DESCRIBED HERE IN THE COLLEGE OF  
12:10PM 5 AMERICAN PATHOLOGISTS DOCUMENT, YOU DIDN'T THINK IT WAS THE  
12:10PM 6 SAME THING THAT THERANOS WAS DOING IN TERMS OF THE METHODOLOGY  
12:10PM 7 OF REMOVING OUTLIERS.

12:10PM 8 DO YOU REMEMBER THAT?

12:10PM 9 A. CORRECT. SO --

12:10PM 10 Q. AND I'M JUST ASKING YOU WHERE IN THE PARAGRAPH DOES IT  
12:10PM 11 ACTUALLY DESCRIBE THE METHOD OF HOW TO GO ABOUT FIGURING OUT  
12:10PM 12 WHAT AN OUTLIER IS AND WHAT TO REMOVE?

12:10PM 13 A. SO THE METHOD HERE IS DESCRIBED BY THINGS LIKE YOU WILL  
12:10PM 14 DELETE OUTLIERS IF THERE'S AN INSTRUMENT MALFUNCTION, TECHNICAL  
12:10PM 15 ERRORS, SPECIMEN MIX-UPS, MISPLACED DECIMALS, INCORRECT UNITS  
12:10PM 16 OF MEASURE, OR DATA ENTRY ERRORS.

12:10PM 17 AND THEN IT TALKS A LITTLE BIT ABOUT THE OUTLIER PROCESS  
12:10PM 18 IS REPEATED.

12:10PM 19 SO THE METHODOLOGY OF DELETING OUTLIERS IS IN THAT SUBSET,  
12:10PM 20 IS THERE A MALFUNCTION OF THE INSTRUMENT, ARE THERE TECHNICAL  
12:11PM 21 ERRORS, DID I SOMEHOW SWAP THE VIALS, SOMETHING OF THAT NATURE,  
12:11PM 22 AND THAT WAS NOT WHAT WAS OCCURRING AT THERANOS WHEN IT CAME TO  
12:11PM 23 OUTLIER DELETION.

12:11PM 24 Q. AND YOU'RE READING THIS FOR THE FIRST TIME TODAY; RIGHT?

12:11PM 25 A. CORRECT.

12:11PM 1 Q. AND YOU DON'T KNOW WHAT DR. ROSENDORFF, DR. SIVARAMAN, OR  
12:11PM 2 OTHER SCIENTISTS AT THERANOS HAD IN MIND WHEN THEY WERE  
12:11PM 3 APPROVING OUTLIER REMOVAL?

12:11PM 4 A. THAT IS CORRECT.

12:11PM 5 Q. AND YOU SEE THAT THE COLLEGE OF AMERICAN PATHOLOGISTS  
12:11PM 6 RECOGNIZES OUTLIER REMOVAL AS A METHODOLOGY THAT IS ACCEPTABLE  
12:11PM 7 AT LEAST IN SOME CIRCUMSTANCES; RIGHT?

12:11PM 8 A. IN THIS CONTEXT, YES.

12:11PM 9 Q. SO IT'S NOT LIKE THE CONTENT WAS SOMETHING MADE UP AT  
12:11PM 10 THERANOS AS YOU UNDERSTAND IT?

12:11PM 11 A. YES.

12:11PM 12 Q. OKAY. GOING TO EXHIBIT 1548.

12:12PM 13 THIS IS THE DATA SET WITH THE NEW YORK SAMPLES THAT  
12:12PM 14 MR. BOSTIC REVIEWED WITH YOU AGAIN ON REDIRECT?

12:12PM 15 A. YES.

12:12PM 16 Q. OKAY. SO YOU AGREED WITH ME, I THINK LAST WEEK, THAT  
12:12PM 17 FOLLOWING STANDARD OPERATING PROCEDURES IS IMPORTANT; RIGHT?

12:12PM 18 A. CORRECT.

12:12PM 19 Q. AND THAT DOING THINGS THAT ARE NOT WITHIN THE STANDARD  
12:12PM 20 OPERATING PROCEDURES IS NOT SOMETHING THAT A LAB SHOULD BE  
12:12PM 21 GENERALLY DOING; RIGHT?

12:12PM 22 A. CORRECT.

12:12PM 23 Q. AND AS YOU SIT HERE, AND WHEN YOU WERE WORKING AT THERANOS  
12:12PM 24 FOR THAT MATTER, YOU CANNOT TELL ME THAT THIS PROCEDURE WAS  
12:12PM 25 WITHIN THE STANDARD OPERATING PROCEDURES AT THERANOS; RIGHT?

12:12PM 1 A. AGAIN, NO.

12:12PM 2 Q. MS. CHEUNG, SO YOU -- IS IT FAIR TO SAY THAT YOU HAVE SOME

12:13PM 3 STRONG OPINIONS ABOUT THERANOS AND YOUR WORK THERE AND WHAT YOU

12:13PM 4 THINK?

12:13PM 5 A. IN WHAT CONTEXT? IN TERMS OF THE -- MY WORK THAT I DID

12:13PM 6 THERE?

12:13PM 7 Q. YEAH. WHAT YOU STATED TO MR. BOSTIC ON REDIRECT, THAT YOU

12:13PM 8 HAD CONCERNS AND YOU HAVE SOME STRONG VIEWS ABOUT THAT?

12:13PM 9 A. BASED ON THE EVIDENCE THAT I GENERATED THERE, I HAVE A

12:13PM 10 PERSPECTIVE ON WHAT THE EVIDENCE HAD TOLD ME OF, YOU KNOW, WERE

12:13PM 11 THE QUALITY CONTROLS FAILING AT A VERY HIGH RATE? YES.

12:13PM 12 WAS IT THE CASE THAT THE EXPERIMENTS THAT WE WERE RUNNING

12:13PM 13 WERE NOT GENERATING THE DATA THAT WE SAW WAS ACCEPTABLE? YES.

12:13PM 14 BUT I DON'T -- YEAH, I HAVE A STRONG OPINION THAT WE

12:13PM 15 SHOULDN'T HAVE BEEN TESTING ON PATIENTS WITH TECHNOLOGY THAT

12:13PM 16 DIDN'T SEEM TO BE UP TO PAR EVEN TO OUR OWN INTERNAL STANDARDS.

12:13PM 17 Q. BUT ALL OF THESE ISSUES THAT YOU HAVE THESE STRONG VIEWS

12:13PM 18 ABOUT, THESE WERE ALL KNOWN TO THE THERANOS SCIENTIFIC TEAM

12:13PM 19 WHILE YOU WERE WORKING THERE; RIGHT?

12:13PM 20 A. I HOPE SO, YEAH.

12:13PM 21 Q. I MEAN, YOU KNOW SO; RIGHT?

12:13PM 22 A. YES.

12:13PM 23 Q. AND IN THE END, YOU DISAGREED WITH THEIR VIEWS ABOUT THAT;

12:14PM 24 RIGHT?

12:14PM 25 A. I DON'T KNOW. I DON'T -- YOU'D HAVE TO GIVE ME SPECIFIC

12:14PM 1

EXAMPLES.

12:14PM 2

Q. WELL, THE DAY THAT YOU LEFT THERANOS --

12:14PM 3

A. YES.

12:14PM 4

Q. -- WAS THERE A MASS EXODUS? DID ALL OF THE SCIENTIFIC

12:14PM 5

TEAM QUIT THE SAME DAY?

12:14PM 6

A. NO.

12:14PM 7

MR. COOPERSMITH: OKAY. NO FURTHER QUESTIONS.

12:14PM 8

THE COURT: ANY FURTHER REDIRECT?

12:14PM 9

MR. BOSTIC: JUST VERY BRIEFLY, YOUR HONOR.

12:14PM 10

**FURTHER REDIRECT EXAMINATION**

12:14PM 11

BY MR. BOSTIC:

12:14PM 12

Q. MS. CHEUNG, WHILE YOU'VE BEEN ON THE STAND, WE'VE TALKED

12:14PM 13

ABOUT A NUMBER OF YOUR COWORKERS AT THERANOS; CORRECT?

12:14PM 14

A. CORRECT.

12:14PM 15

Q. AND INCLUDING SOME INDIVIDUALS THAT WOULD BE INCLUDED IN

12:14PM 16

WHAT MR. COOPERSMITH JUST IDENTIFIED AS THE THERANOS SCIENTIFIC

12:14PM 17

TEAM; IS THAT RIGHT?

12:14PM 18

A. THAT IS CORRECT.

12:14PM 19

Q. AND HE JUST ASKED YOU ABOUT WHETHER YOU DISAGREED WITH

12:14PM 20

THEM AND WHETHER YOU HAD RAISED CONCERNS TO THEM; IS THAT

12:14PM 21

RIGHT?

12:14PM 22

A. THAT IS CORRECT.

12:14PM 23

Q. DURING YOUR TIME AT THE COMPANY, WERE THERE MEMBERS OF

12:14PM 24

THAT SCIENTIFIC TEAM WHO AGREED WITH THE CONCERNS THAT YOU WERE

12:14PM 25

RAISING ABOUT THE THINGS THAT YOU WERE SEEING IN THE LAB?

12:15PM 1 MR. COOPERSMITH: OBJECTION. HEARSAY.

12:15PM 2 THE COURT: OVERRULED.

12:15PM 3 THE WITNESS: YES.

12:15PM 4 BY MR. BOSTIC:

12:15PM 5 Q. CAN YOU NAME SOME OF THOSE PEOPLE, PLEASE?

12:15PM 6 A. MARK PANDORI, SURAJ SAKSENA SOMETIMES, DANIEL YOUNG,

12:15PM 7 SHARADA, ADAM ROSENDORFF. MANY PEOPLE HAD OBSERVED THE SAME

12:15PM 8 EVIDENCE THAT I DID AND ARTICULATED THAT IT WAS CONCERNING.

12:15PM 9 Q. AS TO, LET'S TAKE TWO INDIVIDUALS, DR. PANDORI AND

12:15PM 10 DR. ROSENDORFF, ARE YOU AWARE OF HOW MUCH LONGER THEY STAYED AT

12:15PM 11 THE COMPANY IN 2014?

12:15PM 12 A. NOT MUCH LONGER.

12:15PM 13 Q. ALL RIGHT.

12:15PM 14 NO FURTHER QUESTIONS.

12:15PM 15 THANK YOU, YOUR HONOR.

12:15PM 16 MR. COOPERSMITH: NOTHING FURTHER, YOUR HONOR.

12:15PM 17 THE COURT: MAY THIS WITNESS BE EXCUSED?

12:15PM 18 MR. BOSTIC: NO, YOUR HONOR.

12:15PM 19 MR. COOPERSMITH: YES, YOUR HONOR.

12:15PM 20 THE COURT: YOU'RE EXCUSED.

12:15PM 21 THE WITNESS: THANK YOU.

12:15PM 22 THE COURT: AND JUST LEAVE THE BINDERS THERE.

12:15PM 23 THE WITNESS: OKAY. THANK YOU.

12:15PM 24 THE COURT: LADIES AND GENTLEMEN, LET'S TAKE OUR

12:15PM 25 BREAK. LET'S TAKE 30 MINUTES.



12:15PM

1

COUNSEL, 30 MINUTES?

12:15PM

2

WE'LL BE BACK. THANK YOU.

12:16PM

3

(LUNCH RECESS TAKEN AT 12:16 P.M.)

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**AFTERNOON SESSION**

(JURY IN AT 12:54 P.M.)

THE COURT: PLEASE BE SEATED. THANK YOU FOR YOUR  
COURTESY. WE'RE BACK ON THE RECORD.

MR. BALWANI IS PRESENT.

ALL JURORS AND ALTERNATES ARE PRESENT.

DOES THE GOVERNMENT HAVE ANOTHER WITNESS TO CALL?

MR. BOSTIC: YES, YOUR HONOR.

THE GOVERNMENT CALLS MR. MARK PANDORI.

THE COURT: SIR, IF YOU WOULD COME FORWARD, PLEASE,  
AND STAND OVER HERE BY THE WITNESS STAND, AND RAISE YOUR RIGHT  
HAND WHILE YOU FACE OUR COURTROOM DEPUTY. SHE HAS A QUESTION  
FOR YOU.

**(GOVERNMENT'S WITNESS, MARK PANDORI, WAS SWORN.)**

THE WITNESS: I DO.

THE COURT: PLEASE HAVE A SEAT, SIR. MAKE YOURSELF  
COMFORTABLE.

FEEL FREE TO ADJUST THE CHAIR AND THE MICROPHONE AS YOU  
NEED.

WHEN YOU ARE COMFORTABLE, WOULD YOU PLEASE STATE YOUR NAME  
AND THEN SPELL IT, PLEASE.

THE WITNESS: MAY I TAKE MY MASK OFF?

THE COURT: YOU'VE BEEN VACCINATED?

THE WITNESS: YES.

THE COURT: YOU'RE FULLY VACCINATED?

12:55PM 1 THE WITNESS: YES.

12:55PM 2 THE COURT: YES, YOU MAY. THANK YOU.

12:55PM 3 THE WITNESS: MARK WILLIAM PANDORI.

12:55PM 4 THE COURT: IF YOU COULD SPELL YOUR NAME, PLEASE.

12:55PM 5 THE WITNESS: M-A-R-K, W-I-L-L-I-A-M, P-A-N-D-O-R-I.

12:56PM 6 THE COURT: THANK YOU.

12:56PM 7 COUNSEL.

12:56PM 8 MR. BOSTIC: THANK YOU, YOUR HONOR.

12:56PM 9 **DIRECT EXAMINATION**

12:56PM 10 BY MR. BOSTIC:

12:56PM 11 Q. GOOD AFTERNOON, DR. PANDORI.

12:56PM 12 A. GOOD AFTERNOON.

12:56PM 13 Q. WAS THERE A TIME WHEN YOU WORKED FOR A COMPANY CALLED

12:56PM 14 THERANOS?

12:56PM 15 A. YES.

12:56PM 16 Q. DO YOU REMEMBER YOUR APPROXIMATE DATES OF EMPLOYMENT WITH

12:56PM 17 THE COMPANY?

12:56PM 18 A. I REMEMBER IT BEING DECEMBER OF 2013 TO MAY OF 2014.

12:56PM 19 Q. AND WHEN YOU DEPARTED FROM THE COMPANY, WHAT WAS THE

12:56PM 20 NATURE OF THAT DEPARTURE? WERE YOU TERMINATED? WERE YOU LAID

12:56PM 21 OFF? DID YOU QUIT?

12:56PM 22 A. I QUIT.

12:56PM 23 Q. AND I'D LIKE TO TALK TO YOU SOME MORE A LITTLE BIT LATER

12:56PM 24 ABOUT THE REASONS WHY YOU LEFT, BUT FOR NOW COULD YOU JUST

12:56PM 25 SUMMARIZE IN A COUPLE OF SENTENCES WHY YOU DECIDED TO LEAVE THE

12:56PM 1 COMPANY AFTER SIX MONTHS?

12:56PM 2 A. I WAS DISAPPOINTED WITH THE ACTUALITY OF THE TECHNOLOGY,  
12:56PM 3 AND I WAS DISAPPOINTED IN THE ROLE THAT I PLAYED IN THE  
12:56PM 4 COMPANY, AND I WAS DISAPPOINTED THAT MY EXPERTISE WASN'T  
12:57PM 5 PLAYING A ROLE IN TRYING TO SOLVE CERTAIN ISSUES WITH THE LAB  
12:57PM 6 TESTING THAT WAS GOING ON THERE.

12:57PM 7 Q. AND YOU MENTIONED THE ROLE THAT YOU PLAYED. WHAT WAS YOUR  
12:57PM 8 JOB TITLE AT THERANOS?

12:57PM 9 A. LABORATORY DIRECTOR.

12:57PM 10 Q. ARE YOU CURRENTLY EMPLOYED?

12:57PM 11 A. YES.

12:57PM 12 Q. AND WHERE ARE YOU CURRENTLY EMPLOYED?

12:57PM 13 A. I'M THE LABORATORY DIRECTOR FOR THE NEVADA STATE PUBLIC  
12:57PM 14 HEALTH LABORATORY.

12:57PM 15 I AM AN ASSOCIATE PROFESSOR OF PATHOLOGY IN LABORATORY  
12:57PM 16 MEDICINE AT THE UNIVERSITY OF NEVADA, RENO SCHOOL OF MEDICINE.

12:57PM 17 AND I'M AN ASSOCIATE PROFESSOR OF MICROBIOLOGY AND  
12:57PM 18 IMMUNOLOGY AT THE UNIVERSITY OF NEVADA, RENO SCHOOL OF  
12:57PM 19 MEDICINE.

12:57PM 20 Q. THANK YOU.

12:57PM 21 I'D LIKE TO TALK ABOUT THERANOS IN A MOMENT, BUT FIRST,  
12:57PM 22 CAN YOU SUMMARIZE FOR US YOUR EDUCATIONAL BACKGROUND?

12:57PM 23 A. I WENT TO COLLEGE AT THE UNIVERSITY OF CALIFORNIA BERKELEY  
12:57PM 24 BETWEEN 1988 AND 1992.

12:57PM 25 I WENT TO A PH.D. PROGRAM AND WAS IN A PH.D. PROGRAM AT

12:57PM 1 UNIVERSITY OF CALIFORNIA SAN DIEGO BETWEEN 1993 AND 1998.

12:58PM 2 AND I WAS TRAINED AS A PUBLIC HEALTH MICROBIOLOGIST BY THE  
12:58PM 3 CALIFORNIA DEPARTMENT OF PUBLIC HEALTH.

12:58PM 4 Q. AND FOLLOWING YOUR FORMAL EDUCATION, CAN YOU GIVE US AN  
12:58PM 5 OVERVIEW OF YOUR EMPLOYMENT LEADING UP TO YOUR TIME AT  
12:58PM 6 THERANOS?

12:58PM 7 A. I WORKED AS A POST DOCTORAL RESEARCH FELLOW AT HARVARD  
12:58PM 8 UNIVERSITY SCHOOL OF MEDICINE.

12:58PM 9 AFTER I OBTAINED MY PH.D., I MATRICULATED TO INSTRUCTOR OF  
12:58PM 10 MEDICINE THERE.

12:58PM 11 AFTERWARDS I WORKED AS THE CHIEF MICROBIOLOGIST AT THE  
12:58PM 12 SAN FRANCISCO DEPARTMENT OF PUBLIC LABORATORY.

12:58PM 13 Q. AND IN YOUR ROLE AT THE SAN FRANCISCO DEPARTMENT OF  
12:58PM 14 HEALTH, DEPARTMENT OF PUBLIC HEALTH LABORATORY, CAN YOU TELL US  
12:58PM 15 WHAT KIND OF LAB THAT IS?

12:58PM 16 A. IT IS A PUBLIC HEALTH LABORATORY, BUT IT IS A CLIA  
12:59PM 17 CERTIFIED DIAGNOSTIC LABORATORY. WE PERFORM TESTS ON HUMAN  
12:59PM 18 BEINGS FOR VARIOUS AILMENTS. WE ALSO PERFORM TESTING ON  
12:59PM 19 ANIMALS FOR RABIES.

12:59PM 20 Q. AND WHEN IT COMES TO THE TEST TYPES THAT WERE PERFORMED  
12:59PM 21 THERE AT THE SAN FRANCISCO PUBLIC HEALTH LAB, DID THAT INCLUDE  
12:59PM 22 BLOOD TESTS?

12:59PM 23 A. YES.

12:59PM 24 Q. AND TO PERFORM THOSE BLOOD TESTS, DID YOUR LAB USE  
12:59PM 25 COMMERCIALY AVAILABLE BLOOD ANALYZING DEVICES?

12:59PM 1 A. YES.

12:59PM 2 Q. AND GENERALLY SPEAKING, WERE THE BLOOD TESTS IN THAT LAB

12:59PM 3 FDA APPROVED TESTS OR WERE THEY LABORATORY DEVELOPED TESTS OR

12:59PM 4 WERE THEY A MIX OF BOTH?

12:59PM 5 A. THEY WERE A MIX OF BOTH.

12:59PM 6 Q. WERE -- DID THE MAJORITY FIT INTO ONE OF THOSE CATEGORIES

12:59PM 7 VERSUS THE OTHER?

12:59PM 8 A. THE MAJORITY WERE FDA CLEARED TESTS.

12:59PM 9 Q. AND COULD YOU ESTIMATE FOR US THE VOLUME OF TESTING THAT

01:00PM 10 THAT LAB HANDLED DURING YOUR TIME THERE, IN THE COURSE OF A

01:00PM 11 TYPICAL WEEK, OR MONTH, OR YEAR?

01:00PM 12 A. IN A TYPICAL YEAR BETWEEN 150- TO 200,000 LAB TESTS.

01:00PM 13 Q. AND HOW WOULD YOU DESCRIBE YOUR ROLE IN CONNECTION WITH

01:00PM 14 THE OPERATION OF THAT PARTICULAR LAB?

01:00PM 15 A. AT FIRST I WAS CHIEF MICROBIOLOGIST, WHICH IS A TITLE

01:00PM 16 EQUIVALENT TO BEING THE ASSISTANT LABORATORY DIRECTOR, AND I

01:00PM 17 SERVED IN THAT ROLE I THINK UNTIL ABOUT 2010 WHEREUPON I

01:00PM 18 BECAME -- 2009, 2010 WHEREUPON I BECAME THE LABORATORY

01:00PM 19 DIRECTOR, AND I SERVED IN THAT ROLE UNTIL I LEFT THE

01:00PM 20 LABORATORY.

01:00PM 21 Q. GENERALLY SPEAKING, WHAT DOES A LABORATORY DIRECTOR DO AT

01:00PM 22 A CLINICAL LAB LIKE THIS?

01:00PM 23 A. A LABORATORY DIRECTOR IS RESPONSIBLE FOR EVERY ASPECT OF

01:00PM 24 THE LAB'S OPERATION; THAT FIRST AND FOREMOST WOULD BE THE

01:01PM 25 SAFETY OF ITS MEMBERS; IT WOULD INCLUDE THE QUALITY OF THE

01:01PM 1 LABORATORY TESTING BEING PERFORMED THERE; IT WOULD BE OVERSIGHT  
01:01PM 2 OF PERSONNEL; AND IT WOULD BE ENSURING THAT THE PROPER  
01:01PM 3 TECHNOLOGIES ARE SELECTED FOR TESTING, AND THAT THOSE MACHINES  
01:01PM 4 OR TECHNIQUES ARE OPERATING IN A QUALITY MANNER.

01:01PM 5 Q. AND WHEN YOU WERE AT THE SAN FRANCISCO DEPARTMENT OF  
01:01PM 6 PUBLIC HEALTH LAB, TO WHOM DID YOU REPORT AS LABORATORY  
01:01PM 7 DIRECTOR?

01:01PM 8 A. AT THE SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH LAB AS  
01:01PM 9 THE LABORATORY DIRECTOR, I REPORTED TO THE HEALTH OFFICER AND  
01:01PM 10 THE DIRECTOR OF HEALTH AT FIRST FOR SAN FRANCISCO; AND THEN I  
01:01PM 11 REPORTED TO THE HEAD OF WHAT IS KNOWN AS DISEASE CONTROL AFTER  
01:01PM 12 A REORGANIZATION.

01:01PM 13 Q. AND WERE THOSE INDIVIDUALS EITHER MEDICAL DOCTORS OR  
01:01PM 14 PEOPLE WITH TRAINING IN HEALTH?

01:01PM 15 A. IN BOTH INSTANCES THEY WERE MEDICAL DOCTORS.

01:01PM 16 Q. WHEN YOU WERE LAB DIRECTOR IN SAN FRANCISCO, DID YOUR ROLE  
01:02PM 17 INCLUDE ANY ASPECT OF DEVELOPING OR APPROVING LAB DEVELOPED  
01:02PM 18 TESTS?

01:02PM 19 A. YES, IT DID.

01:02PM 20 Q. AND CAN YOU EXPLAIN WHAT THAT WAS?

01:02PM 21 A. IN TERMS OF APPROVING LAB TESTS, FOR FDA CLEARED METHODS,  
01:02PM 22 THAT INVOLVES WHAT IS CALLED A VERIFICATION PROCESS.

01:02PM 23 SO YOU TAKE THE NEW EQUIPMENT AND THE NEW REAGENTS, AND  
01:02PM 24 YOU TEST -- UTILIZE SPECIMENS FOR WHICH YOU HAVE A GOLD  
01:02PM 25 STANDARD KNOWLEDGE OF THEIR POSITIVITY, NEGATIVITY, OR IF IT'S

01:02PM 1 A QUANTITATIVE TESTS, YOU HAVE A NUMBER ASSOCIATED WITH THOSE  
01:02PM 2 SPECIMENS.

01:02PM 3 AND YOU RUN THEM ON THE EQUIPMENT TO SEE THAT THE  
01:02PM 4 EQUIPMENT IS PERFORMING AS EXPECTED OR THAT THE TEST IS  
01:02PM 5 PERFORMING AS EXPECTED.

01:02PM 6 IN THE DUE COURSE OF A LABORATORY DEVELOPED TEST, IT'S A  
01:02PM 7 LONGER PROCESS WHICH IS CALLED VALIDATION, AND THAT INCLUDES  
01:02PM 8 WHAT I JUST DESCRIBED, BUT ALSO ASCERTAINING THINGS LIKE  
01:02PM 9 ACCURACY, PRECISION TO A LARGER DEGREE, AND SENSITIVITY AND  
01:02PM 10 SPECIFICITY TO A MORE SIGNIFICANT DEGREE.

01:03PM 11 Q. AND WERE YOU INVOLVED IN EACH OF THOSE ASPECTS DURING YOUR  
01:03PM 12 TIME AS LABORATORY DIRECTOR IN SAN FRANCISCO?

01:03PM 13 A. YES, I WAS.

01:03PM 14 Q. AND HOW ABOUT FOR TESTS THAT WERE BEING USED ON PATIENTS  
01:03PM 15 IN THE SAN FRANCISCO LAB, WERE YOU INVOLVED IN ONGOING QUALITY  
01:03PM 16 CONTROL AND PROFICIENCY TESTING FOR THOSE TESTS?

01:03PM 17 A. YES, I WAS.

01:03PM 18 Q. AND HOW ABOUT INTERFACING WITH DOCTORS AND PATIENTS WHO  
01:03PM 19 WERE HAVING TESTS DONE AT THE SAN FRANCISCO LAB, WAS THAT YOUR  
01:03PM 20 RESPONSIBILITY AS WELL?

01:03PM 21 A. TO A DEGREE, YES. IT DIDN'T HAPPEN VERY OFTEN. A FEW  
01:03PM 22 TIMES A YEAR.

01:03PM 23 WELL, FOR CERTAIN TESTS IT HAPPENED QUITE FREQUENTLY. FOR  
01:03PM 24 MOST TESTS IT ONLY HAPPENED A FEW TIMES A YEAR.

01:03PM 25 Q. AND LET'S FOCUS ON YOUR EXPERIENCE WITH THERANOS



01:03PM 1 SPECIFICALLY, AND LET ME START BY ASKING HOW YOU FIRST FOUND  
01:03PM 2 OUT ABOUT THE COMPANY?

01:03PM 3 A. I RECEIVED AN EMAIL INDICATING THAT THERE WAS AN EXCITING  
01:03PM 4 OPPORTUNITY AT A NEW BIOTECH COMPANY IN THE BAY AREA CALLED  
01:04PM 5 THERANOS, AND IT WAS LOOKING TO PERFORM SOME GROUNDBREAKING,  
01:04PM 6 AND LOOKING AT GROUNDBREAKING TECHNOLOGY, RUNNING SMALL  
01:04PM 7 VOLUMES.

01:04PM 8 AND I REMEMBER THEN USING THE INTERNET TO TRY TO GAIN MORE  
01:04PM 9 INFORMATION AND FINDING AN ARTICLE ABOUT THE COMPANY AND  
01:04PM 10 READING MORE ABOUT IT ON THE INTERNET.

01:04PM 11 Q. AND WAS THIS BEFORE APPLYING FOR A JOB WITH THE COMPANY?

01:04PM 12 A. YES.

01:04PM 13 Q. WHEN YOU HEARD ABOUT THE COMPANY AND THE OPEN POSITION,  
01:04PM 14 WERE YOU IMMEDIATELY INTERESTED?

01:04PM 15 A. YES.

01:04PM 16 Q. WHY WAS THAT?

01:04PM 17 A. WELL, I WAS INTERESTED IN THE TECH -- WHAT THEY SOUGHT TO  
01:04PM 18 ACHIEVE. I DIDN'T KNOW WHETHER I WAS INTERESTED IN THE COMPANY  
01:04PM 19 PER SE, BUT IT WAS NOVEL, AND I THOUGHT IT HAD REAL POTENTIAL  
01:04PM 20 TO MEET CERTAIN GOALS THAT ARE VERY IMPORTANT TO ME  
01:04PM 21 PROFESSIONALLY AND SPIRITUALLY.

01:04PM 22 Q. SO LET'S BREAK THAT OUT A LITTLE BIT.

01:04PM 23 YOU SAID THAT YOU WERE INTERESTED IN SOMETHING LIKE THE  
01:04PM 24 PROMISE OF THE TECHNOLOGY; IS THAT RIGHT?

01:04PM 25 A. THAT'S CORRECT.

01:04PM 1 Q. BEFORE APPLYING TO THE COMPANY, WHAT DID YOU UNDERSTAND  
01:05PM 2 ABOUT WHAT THAT TECHNOLOGY WAS AND WHAT THE COMPANY WAS DOING?  
01:05PM 3 A. IT WAS A NEW TECHNOLOGY THAT COULD TAKE A VERY SMALL  
01:05PM 4 AMOUNT OF BLOOD AND RUN A LARGE NUMBER OF LABORATORY TESTS ON  
01:05PM 5 THAT SMALL AMOUNT OF BLOOD.  
01:05PM 6 Q. DID YOU ULTIMATELY DECIDE TO APPLY FOR THAT POSITION AT  
01:05PM 7 THE COMPANY?  
01:05PM 8 A. I DID.  
01:05PM 9 Q. CAN YOU TELL US ABOUT THE INTERVIEW PROCESS? WHO DID YOU  
01:05PM 10 SPEAK WITH?  
01:05PM 11 A. I SPOKE TO SUNNY BALWANI, I SPOKE TO ELIZABETH HOLMES, I  
01:05PM 12 SPOKE TO ADAM ROSENDORFF, AND I SPOKE TO ANOTHER PERSON. I  
01:05PM 13 DON'T REMEMBER HIS FULL NAME. PARNAV WAS HIS FIRST NAME I  
01:05PM 14 BELIEVE.  
01:05PM 15 Q. AND SPECIFICALLY DURING YOUR CONVERSATION WITH  
01:05PM 16 MR. BALWANI, DO YOU RECALL WHETHER YOU LEARNED MORE ABOUT WHAT  
01:05PM 17 THE COMPANY WAS DOING AND WHAT ITS TECHNOLOGY WAS?  
01:05PM 18 A. NO, I DID NOT LEARN MORE ABOUT THAT.  
01:06PM 19 Q. WHAT WAS THE POSITION AT THE COMPANY THAT YOU WERE  
01:06PM 20 INTERVIEWING FOR?  
01:06PM 21 A. I DON'T REMEMBER.  
01:06PM 22 Q. OKAY. DID YOU ULTIMATELY GET AN OFFER OF EMPLOYMENT FROM  
01:06PM 23 THE COMPANY?  
01:06PM 24 A. ULTIMATELY.  
01:06PM 25 Q. AND YOU ACCEPTED?

01:06PM 1

A. YES.

01:06PM 2

Q. YOU MENTIONED THAT YOU HAD READ ONE OR MORE ARTICLES

01:06PM 3

DISCUSSING THE COMPANY BEFORE YOU STARTED WORKING THERE; IS

01:06PM 4

THAT RIGHT?

01:06PM 5

A. THAT'S CORRECT.

01:06PM 6

MR. BOSTIC: MAY I APPROACH, YOUR HONOR?

01:06PM 7

THE COURT: YES.

01:06PM 8

MR. BOSTIC: (HANDING.)

01:06PM 9

Q. DR. PANDORI, I'VE JUST HANDED YOU A BINDER. AND IF I

01:06PM 10

COULD ASK YOU TO TURN TO THE FIRST TAB, WHICH IS 1106?

01:06PM 11

A. I SEE IT.

01:06PM 12

Q. AND DO YOU SEE THERE A "WALL STREET JOURNAL" ARTICLE DATED

01:06PM 13

SEPTEMBER 8TH, 2013?

01:06PM 14

A. I SEE IT, YES.

01:06PM 15

Q. AND TAKE A MOMENT TO LOOK THIS ARTICLE OVER IF YOU WOULD

01:06PM 16

LIKE, AND THEN I'D LIKE YOU TO TELL US WHETHER THIS IS AN

01:07PM 17

ARTICLE THAT YOU SAW BEFORE YOU STARTED WORK AT THE COMPANY?

01:07PM 18

A. YES. I ALREADY CAN TELL THAT THIS IS AN ARTICLE THAT I

01:07PM 19

SAW BEFORE.

01:07PM 20

Q. OKAY. DID THIS ARTICLE HAVE ANY EFFECT ON YOUR

01:07PM 21

UNDERSTANDING OF WHAT THE COMPANY DID OR YOUR EXCITEMENT FOR

01:07PM 22

YOUR JOB THERE?

01:07PM 23

A. THIS ARTICLE INCREASED MY EXCITEMENT FOR THE COMPANY.

01:07PM 24

MR. BOSTIC: YOUR HONOR, THE GOVERNMENT OFFERS

01:07PM 25

EXHIBIT 1106.

01:07PM 1 MR. CAZARES: OBJECTION. DOUBLE HEARSAY.

01:07PM 2 THE COURT: MR. BOSTIC.

01:07PM 3 MR. BOSTIC: YOUR HONOR, THIS IS NOT BEING OFFERED  
01:07PM 4 FOR THE TRUTH. THIS IS BEING OFFERED TO SHOW WHAT WAS IN THE  
01:07PM 5 PUBLIC INFORMATION ABOUT THERANOS AT THE TIME AND TO SHOW THE  
01:07PM 6 EFFECT ON THIS WITNESS.

01:07PM 7 MR. CAZARES: AUTHENTICATION AND STILL DOUBLE  
01:07PM 8 HEARSAY.

01:07PM 9 THE COURT: I THINK HE SAID HE READ IT ALREADY.

01:07PM 10 LADIES AND GENTLEMEN --

01:07PM 11 ANYTHING FURTHER, MR. CAZARES?

01:08PM 12 MR. CAZARES: NO, YOUR HONOR.

01:08PM 13 THE COURT: LADIES AND GENTLEMEN, THIS WILL BE  
01:08PM 14 ADMITTED NOT FOR THE TRUTH OF THE MATTER ASSERTED, THAT IS, NOT  
01:08PM 15 FOR THE TRUTH OF THE ITEMS THAT ARE STATED IN THIS ARTICLE.  
01:08PM 16 THIS IS A NEWSPAPER ARTICLE.

01:08PM 17 HOWEVER, IT IS OFFERED SOLELY FOR THE PURPOSE OF THIS  
01:08PM 18 WITNESS'S STATE OF MIND IN REGARDS TO HIS -- THIS QUESTION  
01:08PM 19 ABOUT HIS SEEKING EMPLOYMENT AT THIS COMPANY AND FOR NO OTHER  
01:08PM 20 REASON.

01:08PM 21 SO IT'S NOT OFFERED FOR THE TRUTH OF THE MATTER ASSERTED.

01:08PM 22 WITH THAT CAVEAT, IT'S ADMITTED, AND IT MAY BE PUBLISHED.

01:08PM 23 MR. BOSTIC: YOUR HONOR, JUST TO CLARIFY, COULD I  
01:08PM 24 ASK THAT THE EXHIBIT ALSO BE ADMITTED TO SHOW WHAT INFORMATION  
01:08PM 25 WAS PUBLICLY AVAILABLE ABOUT THERANOS AT THE TIME?

01:08PM 1 THE COURT: WELL, DOES THAT CALL FOR THE TRUTH OF  
01:08PM 2 THE MATTER THAT IS BEING -- THAT IS PRESENTED IN THE ARTICLE TO  
01:08PM 3 BE RECEIVED?

01:08PM 4 MR. BOSTIC: NO, YOUR HONOR, QUITE THE OPPOSITE.

01:08PM 5 THE COURT: OKAY. ALL RIGHT.

01:08PM 6 MR. CAZARES: OBJECTION, YOUR HONOR. THERE'S NO  
01:09PM 7 STATE OF MIND OF THE WORLD EXCEPTION.

01:09PM 8 THE COURT: NO. THIS GOES TO THIS WITNESS, I  
01:09PM 9 BELIEVE.

01:09PM 10 ALTHOUGH I UNDERSTAND YOU'RE SAYING THAT YOU WOULD LIKE  
01:09PM 11 THIS ADMITTED TO SHOW THAT IT WAS PUBLISHED?

01:09PM 12 MR. BOSTIC: EXACTLY, YOUR HONOR.

01:09PM 13 THE COURT: WELL, I THINK THAT STANDS TO REASON. WE  
01:09PM 14 DON'T HAVE TO DO THAT. IT'S LIMITED FOR THIS WITNESS'S  
01:09PM 15 MOTIVATION, AS YOU SAID, FOR SEEKING EMPLOYMENT AND WHAT HE  
01:09PM 16 READ.

01:09PM 17 MR. BOSTIC: UNDERSTOOD. THANK YOU, YOUR HONOR.

01:09PM 18 THE COURT: SO WITH THAT CAVEAT AND LIMITATION, IT'S  
01:09PM 19 ADMITTED, AND IT MAY BE PUBLISHED.

01:09PM 20 (GOVERNMENT'S EXHIBIT 1106 WAS RECEIVED IN EVIDENCE.)

01:09PM 21 BY MR. BOSTIC:

01:09PM 22 Q. LET'S LOOK ON THE SCREEN AT EXHIBIT 1106.

01:09PM 23 LET'S START WITH -- DO YOU SEE ON THE SCREEN, DR. PANDORI,  
01:10PM 24 A PARAGRAPH THAT BEGINS, "THE SECRET"?

01:10PM 25 A. YES.

01:10PM 1 Q. THE ARTICLE SAYS, "THE SECRET THAT HUNDREDS OF EMPLOYEES  
01:10PM 2 ARE NOW REFINING INVOLVES DEVICES THAT AUTOMATE AND MINIATURIZE  
01:10PM 3 MORE THAN 1,000 LABORATORY TESTS FROM ROUTINE BLOOD WORK TO  
01:10PM 4 ADVANCED GENETIC ANALYSES."

01:10PM 5 DO YOU SEE THAT?

01:10PM 6 A. YES.

01:10PM 7 Q. AND WAS THIS FACT OR THIS REPRESENTATION PART OF WHAT MADE  
01:10PM 8 YOU EXCITED ABOUT THE PROSPECT OF WORKING AT THE COMPANY?

01:10PM 9 A. YES, IT WAS.

01:10PM 10 Q. AND WHY WAS THAT?

01:10PM 11 A. WELL, THERE'S TWO REASONS AT LEAST THAT COME TO MIND  
01:10PM 12 IMMEDIATELY.

01:10PM 13 THE FIRST ONE IS THAT IT IMPLIES THAT THERE'S VERY -- THAT  
01:10PM 14 A LOT OF MEDICAL INFORMATION CAN BE GATHERED FROM A VERY SMALL,  
01:10PM 15 VERY SMALL AMOUNT OF BLOOD.

01:10PM 16 IN PUBLIC HEALTH, THAT'S EXTRAORDINARILY VALUABLE, BECAUSE  
01:10PM 17 THAT MEANS THAT WE CAN EXPAND BLOOD TESTING IN A MORE READ EASY  
01:10PM 18 FASHION TO PEOPLE.

01:10PM 19 WE CAN EASILY DRAW SPECIMENS, AND WE CAN MORE EASILY TEST  
01:11PM 20 SPECIMENS, AND SO WE CAN SERVE THE PUBLIC'S HEALTH BETTER IN  
01:11PM 21 THAT REGARD.

01:11PM 22 THERE'S A SPECIFIC STATEMENT ABOUT ADVANCED GENETIC  
01:11PM 23 ANALYSES, WHICH IS AN AREA OF PARTICULAR INTEREST TO ME, AND  
01:11PM 24 THAT WAS LIKEWISE QUITE INTERESTING AND APPEALING TO ME.

01:11PM 25 Q. WAS THE VOLUME OR THE NUMBER OF TESTS THAT COULD BE

01:11PM 1 PERFORMED FROM THESE SMALL SAMPLES AN IMPORTANT FACTOR IN YOUR  
01:11PM 2 CONSIDERING EMPLOYMENT WITH THE COMPANY?

01:11PM 3 A. IT WAS A FACTOR.

01:11PM 4 Q. LET'S LOOK AT THE NEXT SENTENCE IN THE SAME PARAGRAPH. IT  
01:11PM 5 SAYS, "THERANOS'S PROCESSES ARE FASTER, CHEAPER, AND MORE  
01:11PM 6 ACCURATE THAN THE CONVENTIONAL METHODS AND REQUIRE ONLY  
01:11PM 7 MICROSCOPIC BLOOD VOLUMES, NOT VIAL AFTER VIAL OF THE STUFF."

01:11PM 8 DO YOU SEE THAT?

01:11PM 9 A. YES.

01:11PM 10 Q. AND WAS THIS SIGNIFICANT TO YOU FOR YOUR UNDERSTANDING OF  
01:11PM 11 WHAT THE COMPANY COULD DO WHEN YOU FIRST STARTED?

01:11PM 12 A. YES, FOR THE SAME REASON THAT I STATED EARLIER, THAT THIS  
01:12PM 13 EXPANDS TESTING TO PEOPLE THAT MAY NEED IT AND WOULDN'T HAVE  
01:12PM 14 NECESSARILY HAD ACCESS TO IT UNLESS THESE BARRIERS WERE BROUGHT  
01:12PM 15 DOWN.

01:12PM 16 Q. IT MENTIONS ACCURACY SPECIFICALLY.

01:12PM 17 FOR A ROLE LIKE YOURS, DOES THE ACCURACY OF BLOOD TESTING  
01:12PM 18 MATTER?

01:12PM 19 A. THE ACCURACY OF BLOOD TESTING IS THE MOST IMPORTANT THING  
01:12PM 20 ABOUT BLOOD TESTING, OTHER THAN THE FACT THAT IT SERVES A  
01:12PM 21 MEDICAL PURPOSE TO HELP SOMEBODY. YOU CAN'T DO THAT IF IT'S  
01:12PM 22 NOT ACCURATE.

01:12PM 23 Q. OKAY. LET'S ZOOM OUT AND GO TO I THINK PAGE 2, AND  
01:12PM 24 THERE'S A PARAGRAPH ABOUT HALF WAY DOWN THE PAGE THAT SAYS,  
01:12PM 25 "THERANOS'S TECHNOLOGY ELIMINATES."

01:12PM 1 IF WE CAN ZOOM IN ON THAT.

01:12PM 2 OKAY. DR. PANDORI, THE LANGUAGE IN THE SAME ARTICLE NOW  
01:12PM 3 SAYS, "THERANOS'S TECHNOLOGY ELIMINATES MULTIPLE LAB TRIPS  
01:12PM 4 BECAUSE IT CAN 'RUN ANY COMBINATION OF TESTS, INCLUDING SETS OF  
01:13PM 5 FOLLOW-ON TESTS,' AT ONCE, VERY QUICKLY, ALL FROM A SINGLE  
01:13PM 6 MICRO SAMPLE."

01:13PM 7 DO YOU SEE THAT?

01:13PM 8 A. YES.

01:13PM 9 Q. THERE'S THEN A STATEMENT THAT SAYS, "MS. HOLMES ESTIMATES  
01:13PM 10 THAT PATIENTS AND DOCTORS WILL RECEIVE READOUTS IN AS LITTLE AS  
01:13PM 11 TWO HOURS."

01:13PM 12 DO YOU SEE THAT?

01:13PM 13 A. YES.

01:13PM 14 Q. THE STATEMENTS THAT WE'VE BEEN LOOKING AT IN THIS ARTICLE,  
01:13PM 15 I'LL ASK YOU TO FAST FORWARD IN TIME NOW AND CONSIDER THE  
01:13PM 16 THINGS THAT YOU LEARNED WHEN YOU WERE WORKING AT THERANOS.

01:13PM 17 DID THOSE STATEMENTS TURN OUT TO BE TRUE BASED ON YOUR  
01:13PM 18 EXPERIENCE AT THE COMPANY?

01:13PM 19 A. NO. NO.

01:13PM 20 Q. FOR EXAMPLE, DID THERANOS HAVE DEVICES THAT AUTOMATED AND  
01:13PM 21 MINIATURIZED MORE THAN 1,000 LABORATORY TESTS?

01:13PM 22 MR. CAZARES: OBJECTION. IT'S LEADING.

01:13PM 23 MR. BOSTIC: IT'S NOT LEADING, YOUR HONOR.

01:13PM 24 MR. CAZARES: THE DOCUMENT IS ADMITTED FOR THE  
01:13PM 25 WITNESS'S STATE OF MIND NOT FOR THE TRUTH THAT THE STATEMENTS



01:13PM 1 AND THE REPRESENTATIONS IN THE ARTICLE WERE ACTUALLY MADE

01:14PM 2 PUBLICLY BY ANYONE ASSOCIATED WITH THERANOS.

01:14PM 3 THE COURT: WELL, HE'S ASKING -- AGAIN, YOU'RE NOT

01:14PM 4 ASKING FOR THE TRUTH OF THIS ARTICLE?

01:14PM 5 MR. BOSTIC: NO, YOUR HONOR, THE FALSITY.

01:14PM 6 THE COURT: AND YOU'RE ASKING THIS WITNESS WHETHER

01:14PM 7 OR NOT -- WELL, WHAT HIS EXPERIENCE WAS.

01:14PM 8 MR. BOSTIC: EXACTLY.

01:14PM 9 THE COURT: RIGHT. AND HE CAN TESTIFY ABOUT HIS

01:14PM 10 EXPERIENCE AT THE LAB.

01:14PM 11 MR. CAZARES: THE OBJECTION IS AS TO WHETHER THE

01:14PM 12 REPRESENTATIONS WERE ACTUALLY MADE.

01:14PM 13 MR. BOSTIC: THERE'S NO SUCH QUESTION PENDING FOR

01:14PM 14 THIS WITNESS.

01:14PM 15 THE COURT: OVERRULED.

01:14PM 16 BY MR. BOSTIC:

01:14PM 17 Q. DR. PANDORI, WOULD YOU LIKE THE QUESTION AGAIN?

01:14PM 18 A. PLEASE.

01:14PM 19 Q. THE QUESTION WAS, FOR EXAMPLE, DID THERANOS HAVE DEVICES

01:14PM 20 THAT AUTOMATED AND MINIATURIZED MORE THAN 1,000 LABORATORY

01:14PM 21 TESTS?

01:14PM 22 A. NO.

01:14PM 23 Q. WERE THERANOS'S TESTS FASTER, CHEAPER, MORE ACCURATE AND

01:14PM 24 DID THEY REQUIRE ONLY MICROSCOPIC AMOUNTS OF BLOOD.

01:14PM 25 YOU COULD BREAK THOSE UP IF YOU WOULD LIKE.

01:14PM 1 A. YEAH, I WOULD PREFER TO BREAK THOSE UP.

01:15PM 2 Q. SURE.

01:15PM 3 AND, MS. WACHS, IF WE CAN GO BACK TO PAGE 1 SO WE CAN HAVE

01:15PM 4 THAT LANGUAGE IN FRONT OF US.

01:15PM 5 A. YEAH.

01:15PM 6 Q. SO I'LL DRAW YOUR ATTENTION BACK TO THAT SECOND SENTENCE.

01:15PM 7 LET'S START WITH FASTER.

01:15PM 8 IN YOUR EXPERIENCE WERE THERANOS'S PROCESSES FASTER?

01:15PM 9 A. NO.

01:15PM 10 Q. HOW ABOUT MORE ACCURATE?

01:15PM 11 BASED ON YOUR EXPERIENCE AS LAB DIRECTOR AT THERANOS, WERE

01:15PM 12 THERANOS'S TESTS MORE ACCURATE THAN THE CONVENTIONAL METHODS?

01:15PM 13 A. THEY WERE NOT.

01:15PM 14 Q. AND LET'S GO THEN BACK TO PAGE 2 AND BACK TO THAT MIDDLE

01:15PM 15 PARAGRAPH.

01:15PM 16 IN YOUR EXPERIENCE WORKING AT THE COMPANY, DID THERANOS'S

01:16PM 17 TECHNOLOGY ELIMINATE MULTIPLE LAB TRIPS BECAUSE IT COULD RUN

01:16PM 18 ANY COMBINATION OF TESTS, INCLUDING FOLLOW-ON TESTS, ALL FROM A

01:16PM 19 SINGLE MICRO SAMPLE?

01:16PM 20 A. NO.

01:16PM 21 Q. YOU SAID YOU STARTED --

01:16PM 22 THANK YOU, MS. WACHS. WE CAN TAKE THAT DOWN.

01:16PM 23 YOU SAID, DR. PANDORI, THAT YOU STARTED WORKING AT THE

01:16PM 24 COMPANY IN DECEMBER OF 2013; IS THAT RIGHT?

01:16PM 25 A. CORRECT.

01:16PM 1 Q. DID YOU LEARN MORE ABOUT THE COMPANY'S TESTING OPERATIONS  
01:16PM 2 AND TECHNOLOGY AFTER YOU JOINED THE COMPANY?

01:16PM 3 A. YES.

01:16PM 4 Q. WHEN YOU FIRST JOINED, WHAT DEVICES WAS THERANOS USING TO  
01:16PM 5 CONDUCT ITS PATIENT TESTS?

01:16PM 6 A. THERE WERE MANY. THEY WERE USING FDA CLEARED EQUIPMENT  
01:16PM 7 THAT ANY LAB MIGHT USE, LIKE AN IMMULITE OR A SIEMENS PIECE OF  
01:16PM 8 EQUIPMENT FOR CHEMICAL ANALYSIS. SO THESE WERE THE FDA CLEARED  
01:17PM 9 EQUIPMENT THAT ANY LABORATORY, ANY PARTICULAR CLINICAL  
01:17PM 10 LABORATORY MIGHT PURCHASE AND USE.

01:17PM 11 THEY WERE THEN USING A VERSION OF A SIEMENS ANALYZER THAT  
01:17PM 12 HAD BEEN MODIFIED TO RUN DILUTED SAMPLES.

01:17PM 13 AND THEN THEY WERE USING SOMETHING CALLED EDISONS, WHICH  
01:17PM 14 WERE MACHINES THAT RAN A DIFFERENT CLASS OF BLOOD TEST WHICH WE  
01:17PM 15 REFER TO AS IMMUNOASSAY, AND THOSE WERE BUILT -- THEY WERE  
01:17PM 16 CREATED BY THERANOS.

01:17PM 17 Q. AND SO OF THOSE CATEGORY OF DEVICES THAT YOU JUST LISTED,  
01:17PM 18 WHICH OF THOSE WERE ACTUALLY DESIGNED AND MANUFACTURED BY  
01:17PM 19 THERANOS ITSELF?

01:17PM 20 A. THE EDISONS, TO MY KNOWLEDGE, WERE DESIGNED AND BUILT BY  
01:17PM 21 THERANOS.

01:17PM 22 THE MACHINES -- THEN THERE WAS A VERSION OF THE FDA  
01:17PM 23 CLEARED MACHINE, AND THAT SOME PEOPLE AT THE COMPANY CALLED IT  
01:17PM 24 HACKED, H-A-C-K-E-D, THAT WAS THEIR LANGUAGE, TO RUN -- TO  
01:18PM 25 HANDLE THE LOWER VOLUMES.

01:18PM 1 AND THEN, AS I SAID, THERE WAS REGULAR LAB EQUIPMENT IN  
01:18PM 2 THERE FROM FDA CLEARED LAB EQUIPMENT THAT LABS TYPICALLY BUY.

01:18PM 3 Q. AND THOSE DEVICES WERE NOT CREATED OR MADE BY THERANOS?

01:18PM 4 A. THAT'S CORRECT.

01:18PM 5 Q. FOCUSsing SPECIFICALLY ON THE EDISON, IN YOUR JOB AS LAB  
01:18PM 6 DIRECTOR, DID YOU COME TO HAVE AN UNDERSTANDING OF WHAT THE  
01:18PM 7 DEVICE COULD DO AND WHAT IT COULDN'T DO IN TERMS OF DIFFERENT  
01:18PM 8 TEST TYPES?

01:18PM 9 A. I DID, YES.

01:18PM 10 Q. CAN YOU DESCRIBE THAT FOR US AT A HIGH LEVEL?

01:18PM 11 A. AT A -- DO YOU WANT TO KNOW WHICH PARTICULAR TEST IT COULD  
01:18PM 12 RUN?

01:18PM 13 Q. I WON'T, I WON'T TEST YOUR MEMORY THAT WAY UNLESS YOU HAVE  
01:18PM 14 THOSE AT HAND.

01:18PM 15 I'M ASKING IF THERE WERE CATEGORIES OF TESTS THAT COULD BE  
01:18PM 16 DONE AND COULDN'T BE DONE BY THE EDISON?

01:19PM 17 A. EDISONS RAN A CATEGORY OF TESTS WHICH WE CALL  
01:19PM 18 IMMUNOASSAYS. SO THEY WOULD DETECT LARGER BIOMOLECULES, AND  
01:19PM 19 THEY DID SO USING ANTIBODY INTERMEDIARIES, SO THEY DETECTED AND  
01:19PM 20 COUNTERED THINGS.

01:19PM 21 WHAT YOU WOULDN'T RUN IS SOMETHING LIKE POTASSIUM OR  
01:19PM 22 SODIUM, IF YOU NEEDED TO KNOW THAT.

01:19PM 23 BUT LARGER MOLECULES, IF YOU COULD DETECT WITH ANTIBODIES,  
01:19PM 24 YOU WOULD USE AN EDISON.

01:19PM 25 Q. YOU MENTIONED SOME CHEMISTRY TESTS THAT COULD NOT BE DONE

01:19PM 1 ON THE EDISON; IS THAT RIGHT?

01:19PM 2 A. THAT'S CORRECT.

01:19PM 3 Q. AND HOW ABOUT CYTOMETRY TESTS LIKE A COMPLETE BLOOD COUNT,

01:19PM 4 COULD THE EDISON DO THOSE?

01:19PM 5 A. NO.

01:19PM 6 Q. AND HOW ABOUT GENETIC ANALYSES, COULD THE EDISON DO THOSE

01:19PM 7 TESTS?

01:19PM 8 A. NO, THE EDISON DIDN'T DO GENETIC TESTING.

01:19PM 9 Q. DO YOU KNOW APPROXIMATELY HOW MANY ASSAYS THE EDISON DID

01:19PM 10 DURING YOUR TIME THERE?

01:19PM 11 A. THE TOTAL NUMBER OF TESTS RUN ON THE EDISONS.

01:19PM 12 Q. APPROXIMATELY HOW MANY DIFFERENT ASSAYS COULD THE EDISON

01:19PM 13 DO, IF YOU REMEMBER?

01:19PM 14 A. I REMEMBER IT WAS AT LEAST FIVE, OR APPROXIMATELY THAT.

01:20PM 15 Q. AS YOU CAME TO UNDERSTOOD -- SORRY.

01:20PM 16 AS YOU CAME TO UNDERSTAND THE CAPABILITIES AND LIMITATIONS

01:20PM 17 OF THE EDISON, DID YOU VIEW IT AS A GROUNDBREAKING TECHNOLOGY

01:20PM 18 IN 2013?

01:20PM 19 A. NO, I DID NOT.

01:20PM 20 Q. WHY NOT?

01:20PM 21 A. WELL --

01:20PM 22 MR. CAZARES: OBJECTION. 702.

01:20PM 23 THE COURT: DO YOU WANT TO LAY A LITTLE FOUNDATION,

01:20PM 24 HIS BACKGROUND.

01:20PM 25 BY MR. BOSTIC:

01:20PM 1 Q. IN YOUR PRE-THERANOS EXPERIENCE WORKING AT CLINICAL LABS,  
01:20PM 2 DID YOU COME TO HAVE A GENERAL KNOWLEDGE OF WHAT KINDS OF  
01:20PM 3 TECHNOLOGY WAS OUT THERE AND AVAILABLE FOR RUNNING BLOOD TESTS?

01:20PM 4 A. YEAH. THAT WAS A MAJOR PART OF MY JOB.

01:20PM 5 Q. AND WAS IT PART OF YOUR JOB TO KEEP UP WITH THE STATE OF  
01:20PM 6 THE ART IN TERMS OF WHAT BLOOD ANALYZERS COULD DO?

01:20PM 7 A. I CONSIDERED IT A SERIOUS PART OF MY JOB.

01:20PM 8 Q. SO BASED ON THAT FOUNDATION, BASED ON YOUR KNOWLEDGE OF  
01:21PM 9 THE INDUSTRY AT THE TIME AND WHAT YOU OBSERVED, WAS THE EDISON  
01:21PM 10 GROUNDBREAKING IN 2013?

01:21PM 11 MR. CAZARES: SAME OBJECTION.

01:21PM 12 THE COURT: OVERRULED. YOU CAN ANSWER THE QUESTION.

01:21PM 13 THE WITNESS: NO, I DID NOT FIND IT GROUNDBREAKING.

01:21PM 14 BY MR. BOSTIC:

01:21PM 15 Q. IN WHAT WAY WAS IT NOT GROUNDBREAKING?

01:21PM 16 A. THERE WERE AT LEAST TWO REASONS, IF NOT MORE.

01:21PM 17 THE FIRST REASON WAS THAT THE AMOUNT OF SAMPLE THAT WAS  
01:21PM 18 PUT IN THERE WAS NOT REALLY VERY DIFFERENT SUBSTANTIALLY THAN  
01:21PM 19 WHAT WOULD BE PUT INTO SOME OF THE OTHER IMMUNOASSAY TESTS THAT  
01:21PM 20 ARE COMMERCIALY AVAILABLE. SO THERE WAS NO DIFFERENCE IN  
01:21PM 21 VALUE THAT WAS REQUIRED TO RUN THE TESTS.

01:21PM 22 THE EDISON COULD ONLY RUN, AS I RECALL, ONE SPECIMEN AT A  
01:21PM 23 TIME IN EACH MACHINE AT THAT POINT.

01:21PM 24 AND THE IMMUNOASSAY TECHNOLOGIES WITH WHICH I HAVE  
01:21PM 25 FAMILIARITY CAN RUN UPWARDS OF 90 OR MORE SPECIMENS

01:21PM 1 SIMULTANEOUSLY.

01:21PM 2 AND THEN THE FAILURE RATE OF THE CONTROLS ON THE EDISONS  
01:22PM 3 WAS NOTABLY HIGHER THAN WHAT I WOULD SEE ON THE ASSAY EQUIPMENT  
01:22PM 4 WITH WHICH I HAD FAMILIARITY, EITHER LITERATURE OR DIRECT USE  
01:22PM 5 OR SUPERVISORIAL ROLE OVER.

01:22PM 6 Q. LET ME ASK, AS YOU CAME TO UNDERSTAND THESE THINGS ABOUT  
01:22PM 7 THE EDISON DEVICE, WAS THAT CONSISTENT OR INCONSISTENT WITH  
01:22PM 8 WHAT YOU HAD READ IN PUBLICLY AVAILABLE INFORMATION AT  
01:22PM 9 THERANOS?

01:22PM 10 A. AT THAT TIME IT WAS INCONSISTENT.

01:22PM 11 Q. LET ME TALK A LITTLE BIT MORE ABOUT YOUR ROLE AT THERANOS  
01:22PM 12 SPECIFICALLY. I'M SORRY IF YOU SAID ALREADY, BUT WHAT WAS YOUR  
01:22PM 13 TITLE THERE?

01:22PM 14 A. LABORATORY DIRECTOR.

01:22PM 15 Q. AND WHAT DID THAT MEAN FOR YOU AT THERANOS? WHAT WAS  
01:22PM 16 INCLUDED IN YOUR RESPONSIBILITY?

01:22PM 17 A. FOR ME IT INCLUDED OVERSIGHT OF WHAT WAS CALLED CLIA  
01:22PM 18 LABORATORY, AND IT WAS LARGELY AN OPERATIONAL AND LOGISTICS  
01:22PM 19 ROLE TO MAKE SURE THAT THINGS WERE BEING TESTED IN A RAPID  
01:23PM 20 MANNER, IN A PROPER MANNER, AND THAT I WAS MANAGING THE  
01:23PM 21 LABORATORY SCIENTISTS TO MAKE SURE THAT THEY WERE GETTING THEIR  
01:23PM 22 JOBS DONE, AND I WAS TO CONSULT WITH ADAM ROSENDORFF WHO WAS  
01:23PM 23 ALSO A LABORATORY DIRECTOR.

01:23PM 24 Q. AND YOU MENTIONED DR. ROSENDORFF. CAN YOU TELL US MORE  
01:23PM 25 ABOUT HOW YOU FIT INTO THE -- EXCUSE ME -- THE ORGANIZATIONAL

01:23PM 1 STRUCTURE AT THE COMPANY?

01:23PM 2 A. I -- ORGANIZATIONAL STRUCTURE, MAY I ASK DO YOU MEAN TO

01:23PM 3 WHOM I REPORTED?

01:23PM 4 Q. LET'S START WITH THAT, SURE.

01:23PM 5 A. I REPORTED TO SUNNY BALWANI.

01:23PM 6 Q. AND HOW DID YOU COME TO UNDERSTAND THAT YOU REPORTED TO

01:23PM 7 MR. BALWANI?

01:23PM 8 A. I DON'T RECALL.

01:23PM 9 Q. YOU MENTIONED WORKING WITH DR. ROSENDORFF.

01:23PM 10 WHAT WERE YOUR POSITIONS RELATIVE TO EACH OTHER?

01:23PM 11 A. WE CONSIDERED ONE ANOTHER PEERS, ALTHOUGH HIS NAME WAS ON

01:24PM 12 THE LICENSE, I CONSULTED HIM ON MATTERS OF QUALITY CONTROL AND

01:24PM 13 LOGISTICS IN THE LABORATORY, AND HE AND I WOULD DISCUSS

01:24PM 14 FINDINGS IN THE LABORATORY AND WOULD WORK TOGETHER IN WHAT IS

01:24PM 15 THE ISSUES AND THE PROBLEM SOLVING PROCESSES, WHICH ARE NORMAL

01:24PM 16 IN CLIA LABORATORIES.

01:24PM 17 Q. YOU MENTIONED IN YOUR PREVIOUS LAB DIRECTOR ROLE YOU

01:24PM 18 REPORTED TO MEDICAL DOCTORS SPECIFICALLY; IS THAT RIGHT?

01:24PM 19 A. WHEN I WAS THE LABORATORY DIRECTOR FOR THE CITY AND COUNTY

01:24PM 20 OF SAN FRANCISCO'S PUBLIC HEALTH LABORATORY, I REPORTED TO A

01:24PM 21 PERSON WHO WAS A MEDICAL DOCTOR. AND, YEAH, ON BOTH OCCASIONS,

01:24PM 22 YES, I REPORTED TO A MEDICAL DOCTOR.

01:24PM 23 Q. AND WAS THIS THE FIRST TIME IN YOUR CAREER WHEN YOU JOINED

01:25PM 24 THERANOS THAT YOU HAD REPORTED AS LAB DIRECTOR TO SOMEONE WHO

01:25PM 25 DIDN'T HAVE MEDICAL OR SCIENTIFIC TRAINING?



01:25PM 1 A. YES.

01:25PM 2 Q. DID YOU HAVE A REACTION TO THAT STRUCTURE AT THE TIME?

01:25PM 3 A. AT WHAT TIME?

01:25PM 4 Q. WHEN YOU FIRST JOINED THE COMPANY, DID YOU HAVE A REACTION

01:25PM 5 TO THE FACT THAT YOU WERE REPORTING TO SOMEONE WHO WASN'T AN

01:25PM 6 M.D.?

01:25PM 7 A. AT THE MOMENT THAT I JOINED THE COMPANY AND EARLY ON, I

01:25PM 8 DID NOT HAVE A REACTION.

01:25PM 9 Q. DID YOU LATER COME TO HAVE AN OPINION ABOUT WHETHER THAT

01:25PM 10 WAS A GOOD OR BAD THING?

01:25PM 11 A. I LATER CAME TO HAVE AN OPINION THAT IT WAS A BAD THING.

01:25PM 12 Q. CAN YOU TELL ME MORE ABOUT MR. BALWANI'S ROLE IN

01:25PM 13 CONNECTION WITH THE CLINICAL LAB? YOU SAID YOU REPORTED TO

01:25PM 14 HIM, BUT HOW WAS HE INVOLVED IN LABORATORY OPERATIONS?

01:25PM 15 A. SUNNY WANTED ALL OF THE INFORMATION IN EVERY ASPECT OF THE

01:25PM 16 OPERATION TO BE KNOWN TO HIM, AND, IF NECESSARY, HE WOULD STEP

01:26PM 17 IN TO ASSIST IN SOLVING PROBLEMS AND DISCUSS THEM AND TO ASSIGN

01:26PM 18 DIFFERENT PEOPLE TO SOLVE DIFFERENT PROBLEMS.

01:26PM 19 Q. YOU SAID THAT YOUR IMPRESSION WAS THAT HE WANTED TO KNOW

01:26PM 20 WHAT WAS HAPPENING.

01:26PM 21 HOW DID HE CONVEY THAT OR HOW DID HE ACHIEVE THAT AT

01:26PM 22 THERANOS?

01:26PM 23 A. SUNNY WAS VERY COMMUNICATIVE, AND HE SPOKE TO AS MANY

01:26PM 24 PEOPLE AS HE COULD AS OFTEN AS HE COULD, AND SOUGHT TO HAVE AS

01:26PM 25 MUCH INTELLIGENCE ABOUT WHAT WAS GOING ON IN THE COMPANY AS HE

01:26PM 1 COULD AT ALL TIMES.

01:26PM 2 AND THAT WAS EITHER VOCALLY OR BY EMAIL. AND, YOU KNOW,  
01:26PM 3 VOCALLY WOULD BE LIKE MEETINGS OR INDIVIDUAL CONVERSATIONS.

01:26PM 4 Q. AND IN YOUR PERSONAL EXPERIENCE, HOW FREQUENTLY WERE YOU  
01:26PM 5 IN CONTACT WITH MR. BALWANI ABOUT EVENTS IN THE LAB DURING YOUR  
01:26PM 6 TIME AT THERANOS?

01:26PM 7 A. I BELIEVE EVERY DAY THAT I COULD THAT HE WAS THERE.

01:27PM 8 Q. BESIDES YOUR ROLE IN THE CLINICAL LAB WHERE PATIENT  
01:27PM 9 TESTING WAS DONE, DID YOU ALSO HAVE ANY INVOLVEMENT IN THE  
01:27PM 10 RESEARCH AND DEVELOPMENT SIDE?

01:27PM 11 A. I DID.

01:27PM 12 Q. CAN YOU DESCRIBE WHAT THAT WAS?

01:27PM 13 A. I WAS ASKED TO ASSIST IN REVIEWING VALIDATION REPORTS FOR  
01:27PM 14 ANOTHER PART OF THE COMPANY THAT WAS DEVELOPING A GENETIC STYLE  
01:27PM 15 TEST TO DETECT INFECTIOUS ORGANISMS, AND I WAS ASKED TO REVIEW  
01:27PM 16 THE VALIDATION STUDIES THAT WERE DONE IN FURTHERANCE OF MOVING  
01:27PM 17 THOSE TESTS FORWARD.

01:27PM 18 Q. AND IN CONNECTION WITH THAT -- WELL, LET ME ASK, THAT  
01:27PM 19 TESTING, WAS IT GOING TO BE PERFORMED ON THE EDISON 3.0 OR THE  
01:27PM 20 3.5 DEVICE?

01:27PM 21 A. NO, IT WAS NOT.

01:27PM 22 Q. WAS THERE A PARTICULAR DEVICE THAT IT WOULD BE PERFORMED  
01:28PM 23 ON?

01:28PM 24 A. NOT TO MY KNOWLEDGE.

01:28PM 25 Q. IN THAT ROLE, WORKING WITH R&D, DID YOU ALSO REPORT TO

01:28PM 1 MR. BALWANI?

01:28PM 2 A. YES.

01:28PM 3 Q. AND WAS HE SIMILARLY INVOLVED AND AWARE OF WHAT WAS

01:28PM 4 HAPPENING ON THE R&D SIDE AS HE WAS AWARE ON THE CLINICAL SIDE?

01:28PM 5 A. YES. HE SOUGHT TO KNOW EVERYTHING HE COULD ABOUT

01:28PM 6 EVERYTHING.

01:28PM 7 Q. BEFORE YOU JOINED THERANOS, WERE YOU AWARE OF THE

01:28PM 8 COMPANY'S USE OF THIRD PARTY DEVICES?

01:28PM 9 A. I'M SORRY, CAN YOU RESTATE THE QUESTION.

01:28PM 10 Q. SURE.

01:28PM 11 BEFORE YOU STARTED WORKING AT THE COMPANY, DID YOU KNOW

01:28PM 12 THAT THERANOS WAS USING THIRD PARTY DEVICES FOR MANY OF ITS

01:28PM 13 TESTS?

01:28PM 14 A. SO BY "THIRD PARTY DEVICES," YOU MEAN FDA CLEARED

01:28PM 15 EQUIPMENT THAT WAS RUN BY OTHER COMPANIES?

01:28PM 16 Q. CORRECT.

01:28PM 17 A. I DID NOT KNOW THAT.

01:28PM 18 Q. WERE YOU SURPRISED TO KNOW THAT WHEN YOU JOINED THE

01:28PM 19 COMPANY?

01:28PM 20 A. YES.

01:28PM 21 Q. DO YOU REMEMBER THE APPROXIMATE PROPORTION OF HOW MANY

01:29PM 22 TESTS WERE BEING HANDLED BY THERANOS BUILT DEVICES VERSUS HOW

01:29PM 23 MANY DEVICES WERE BEING RUN BY NON-THERANOS BUILT DEVICES WHEN

01:29PM 24 YOU WERE THERE?

01:29PM 25 A. I COULDN'T QUANTIFY THAT FOR YOU, BUT I REMEMBER WHEN I

01:29PM 1 FIRST ARRIVED, MORE TESTS WERE BEING RUN ON THE, AS YOU CALLED  
01:29PM 2 THEM, THIRD PARTY, THE FDA CLEARED EQUIPMENT, AND THAT RATIO  
01:29PM 3 SHIFTED MORE TOWARDS THERANOS DEVELOPED TESTS AS TIME WENT BY,  
01:29PM 4 BUT I COULDN'T QUANTIFY THAT SHIFT.

01:29PM 5 Q. LET ME ASK THE SAME QUESTION FOR VENOUS TESTING VERSUS  
01:29PM 6 FINGERSTICK TESTING.

01:29PM 7 FIRST, CAN YOU EXPLAIN THE DIFFERENCE BETWEEN THOSE TWO  
01:29PM 8 METHODS OF GETTING A BLOOD SAMPLE?

01:29PM 9 A. VENOUS TESTING, A NEEDLE IS INSERTED INTO THE VEIN AND  
01:29PM 10 DRAWN DIRECTLY FROM THE VEIN.

01:29PM 11 IN FINGERSTICK TESTING, A LANCET OR SOME SORT OF SHARP  
01:29PM 12 DEVICE IS USED TO POKE GENERALLY THE FINGERTIP, AND BLOOD  
01:30PM 13 STARTS TO COME OUT OF THAT SMALL HOLE, AND IT IS GATHERED OFTEN  
01:30PM 14 BY OTHER METHODS.

01:30PM 15 Q. BEFORE YOU JOINED THERANOS, WERE YOU AWARE THAT THE  
01:30PM 16 COMPANY RELIED ON VENOUS TESTING FOR A LARGER PORTION OF ITS  
01:30PM 17 TESTING?

01:30PM 18 A. I WAS NOT AWARE THAT THEY RELIED ON THAT.

01:30PM 19 Q. YOU MENTIONED EARLIER THAT THE EDISON DEVICE WAS ONLY ABLE  
01:30PM 20 TO ANALYZE ONE ANALYTE AT THE TIME; IS THAT RIGHT?

01:30PM 21 A. AT THE TIME I WAS THERE, THAT IS MY RECOLLECTION.

01:30PM 22 Q. DID YOU DISCUSS THE LIMITATIONS OF THE EDISON DEVICE WITH  
01:30PM 23 MR. BALWANI?

01:30PM 24 A. YES.

01:30PM 25 Q. DID YOU DISCUSS, FOR EXAMPLE, THAT PARTICULAR LIMITATION,

01:30PM 1 THAT THE EDISON COULD ONLY DO ONE ASSAY AT A TIME?

01:30PM 2 A. I DID.

01:30PM 3 Q. WERE THERE TESTS THAT THERANOS OFFERED DURING YOUR TIME AT  
01:30PM 4 THE COMPANY THAT THE COMPANY DIDN'T -- COULDN'T DO IN HOUSE AT  
01:31PM 5 ALL?

01:31PM 6 A. YES, THERE WERE.

01:31PM 7 Q. AND HOW WERE THOSE TESTS HANDLED BY THERANOS?

01:31PM 8 A. THEY WERE SENT TO OTHER LABORATORIES THAT DID RUN THOSE  
01:31PM 9 TESTS.

01:31PM 10 Q. WHEN YOU WERE AT THERANOS, DID YOU COME TO BE FAMILIAR  
01:31PM 11 WITH A TERM CALLED COEFFICIENT OF VARIATION?

01:31PM 12 A. I WAS FAMILIAR WITH THAT TERM BEFORE I JOINED THERANOS.

01:31PM 13 Q. FAIR ENOUGH.

01:31PM 14 WHAT WAS OR WHAT IS COEFFICIENT OF VARIATION IN THE  
01:31PM 15 CONTEXT OF LABORATORY TESTING?

01:31PM 16 A. WELL, THE BEST WAY -- I CAN EXPLAIN THAT TECHNICALLY, BUT  
01:31PM 17 I THINK IT'S MORE IMPORTANT THAT I EXPLAIN WHAT IT MEANS MORE  
01:31PM 18 BASICALLY I THINK.

01:31PM 19 Q. PLEASE.

01:31PM 20 A. SO IT'S ESSENTIALLY WHEN YOU TALK ABOUT A COEFFICIENT OF  
01:31PM 21 VARIATION, YOU'RE LOOKING AT A TEST THAT GENERATES A NUMBER AS  
01:31PM 22 A RESULT, AND THE QUESTION IS HOW MUCH DRIFT IS THERE AROUND  
01:31PM 23 THAT VALUE?

01:31PM 24 SO IF YOU TAKE THE SAME SAMPLE, LET'S SAY IT'S A SAMPLE OF  
01:31PM 25 A SCORE OF 100, WHAT DRIFT CAN YOU EXPECT IF YOU WERE TO RUN

01:32PM 1 THAT SAMPLE OVER AND OVER AGAIN IN THE MACHINE OR THE LAB TEST?

01:32PM 2 A COEFFICIENT OF VARIATION OF 10 IN THAT CASE WOULD BE

01:32PM 3 THAT YOU WOULD GENERALLY SEE VALUES BETWEEN 90 AND 110 IF THE

01:32PM 4 EXPECTED VALUE IS 100.

01:32PM 5 DOES THAT HELP?

01:32PM 6 Q. YES. THANK YOU.

01:32PM 7 A. MORE TECHNICALLY, IT'S THE STANDARD DEVIATION DIVIDED BY

01:32PM 8 THE MEAN.

01:32PM 9 Q. AND AS A LABORATORY DIRECTOR, ARE YOU HOPING TO SEE A

01:32PM 10 LARGE COEFFICIENT OF VARIATION OR A SMALL COEFFICIENT OF

01:32PM 11 VARIATION?

01:32PM 12 A. YOU WANT TESTS TO HAVE SMALL COEFFICIENT OF VARIATIONS.

01:32PM 13 Q. AND CAN YOU EXPLAIN WHY THAT IS?

01:32PM 14 A. WELL, IT'S PLAYS TO THE ACCURACY AND PRECISION OF A TEST.

01:32PM 15 IF A TEST DRIFTS QUITE A BIT AND THE NUMBER IS IMPORTANT FOR

01:32PM 16 MAKING A MEDICAL ACTION BASED ON THE TEST RESULT, YOU NEED THAT

01:32PM 17 NUMBER, YOU NEED TO BE CONFIDENT IN THAT NUMBER.

01:32PM 18 IF THE COEFFICIENT OF VARIATION IS LOW, THEN THAT MEANS

01:33PM 19 THAT YOU CAN FEEL CONFIDENT THAT THE VALUE THAT YOU GET IN THE

01:33PM 20 LAB TEST RESULT IS GOING TO BE VERY CLOSE TO THE TRUE VALUE.

01:33PM 21 Q. DURING YOUR TIME AT THERANOS, DID YOU HAVE OCCASION TO

01:33PM 22 BECOME FAMILIAR WITH HOW THE THERANOS DEVICE -- OF COURSE --

01:33PM 23 HOW THE THERANOS DEVICE PERFORMED IN CONNECTION WITH

01:33PM 24 COEFFICIENT OF VARIATION?

01:33PM 25 A. YOU SAID THERANOS EQUIPMENT?

01:33PM 1 Q. YES. LET'S TALK ABOUT THE EDISON SPECIFICALLY.

01:33PM 2 A. OH. THE EDISONS, THERE WAS, THERE WAS SOME EVIDENCE TO

01:33PM 3 SUGGEST THAT THE COEFFICIENT OF VARIATIONS WERE PRETTY HIGH.

01:33PM 4 Q. AND DID YOU MONITOR OR KEEP YOURSELF AWARE OF CV

01:33PM 5 PERFORMANCE AS PART OF YOUR JOB AT THERANOS?

01:33PM 6 A. I DIDN'T KEEP TRACK OR MONITOR, BUT THAT WAS THE JOB OF

01:34PM 7 OTHER PEOPLE.

01:34PM 8 Q. AND THE RESULTING INFORMATION WAS AVAILABLE TO YOU?

01:34PM 9 A. YES.

01:34PM 10 Q. CAN I ASK YOU TO TURN TO TAB 5769 IN THE BINDER IN FRONT

01:34PM 11 OF YOU.

01:34PM 12 A. I'M SORRY, WHAT NUMBER?

01:34PM 13 Q. 5769.

01:34PM 14 A. I SEE IT.

01:34PM 15 Q. AND IS THAT AN EMAIL CHAIN, INCLUDING YOU, RELATING TO

01:34PM 16 VARIATION IN EDISON PERFORMANCE AT THERANOS?

01:34PM 17 A. I'M SORRY, COULD YOU REPEAT THAT.

01:34PM 18 Q. OF COURSE.

01:34PM 19 IS THAT AN EMAIL INCLUDING YOU RELATING TO VARIATION

01:34PM 20 BETWEEN EDISON RESULTS AT THERANOS?

01:34PM 21 A. YES.

01:34PM 22 MR. BOSTIC: YOUR HONOR, THE GOVERNMENT OFFERS 5769.

01:34PM 23 MR. CAZARES: NO OBJECTION.

01:34PM 24 THE COURT: IT'S ADMITTED. IT MAY BE PUBLISHED.

01:34PM 25 (GOVERNMENT'S EXHIBIT 5769 WAS RECEIVED IN EVIDENCE.)

01:35PM 1 BY MR. BOSTIC:

01:35PM 2 Q. OKAY. SO, DR. PANDORI, I'LL ASK YOU TO LOOK AT THIS EMAIL

01:35PM 3 CHAIN FIRST. THE SUBJECT LINE IS FT4 AND TSH STUDY RESULTS.

01:35PM 4 DO YOU SEE THAT?

01:35PM 5 A. I DO.

01:35PM 6 Q. AND THIS IS FROM APRIL OF 2014; IS THAT RIGHT?

01:35PM 7 A. IT IS, ACCORDING TO THIS.

01:35PM 8 Q. IN YOUR BINDER BEHIND THE EMAIL IS THE EXCEL ATTACHMENT IF

01:35PM 9 YOU WOULD LIKE TO REFER TO THAT.

01:35PM 10 BUT I'M WONDERING IF YOU RECALL THIS STUDY OR IF YOU CAN

01:35PM 11 TELL US WHAT THE CONTEXT WAS FOR THIS EMAIL EXCHANGE?

01:35PM 12 A. MAY I TAKE A MOMENT TO REVIEW THE DOCUMENT?

01:35PM 13 Q. OF COURSE.

01:35PM 14 (PAUSE IN PROCEEDINGS.)

01:36PM 15 THE WITNESS: OKAY. WHAT IS YOUR QUESTION?

01:36PM 16 BY MR. BOSTIC:

01:36PM 17 Q. MY QUESTION IS CAN YOU RECALL THIS STUDY OR CAN YOU GIVE

01:36PM 18 US SOME CONTEXT FOR THIS EMAIL EXCHANGE?

01:36PM 19 A. THERE WAS CONCERN ON THE PART OF MYSELF, DR. ROSENDORFF,

01:36PM 20 AND LANGLEY GEE THAT THE RESULTS FROM FT4 AND TSH, WHICH WERE

01:36PM 21 RUN ON THE EDISON, WERE VARYING A LOT, AND THAT THAT MIGHT BE A

01:36PM 22 COMPROMISING ISSUE WITH REGARD TO THE QUALITY OF THE TEST.

01:36PM 23 Q. AND WERE THESE ASSAYS THAT WERE ALREADY BEING USED FOR

01:36PM 24 PATIENTS IN THE CLINICAL LAB?

01:36PM 25 A. YES.



01:36PM 1 Q. SO AS A RESULT OF THOSE CONCERNS, WHAT ACTIONS WERE TAKEN  
01:36PM 2 THAT WE SEE IN THIS EMAIL?

01:36PM 3 A. DR. ROSENDORFF AND MYSELF LOOKED AT DATA, AND LANGLEY GEE,  
01:36PM 4 AND WE CAME TO THE CONCLUSION THAT THIS WOULD BE -- THE RESULTS  
01:37PM 5 FROM THESE TESTS MIGHT BE PROBLEMATIC, AND THAT IT APPEARS IN  
01:37PM 6 THIS EMAIL THAT THERE WAS A PROPOSED SOLUTION TO APPLY WHAT IS  
01:37PM 7 CALLED A BIAS CORRECTION TO THE NUMERICAL RESULTS.

01:37PM 8 AND THAT WOULD BE TAKING EVERY RESULT FROM A DEVICE AND  
01:37PM 9 THEN APPLYING SOME FACTOR TO THAT, LIKE SAYING EVERY DEVICE OR  
01:37PM 10 EVERY RESULT THAT COMES OUT, MULTIPLY IT BY TWO TO GET THE  
01:37PM 11 CORRECT RESULT. THAT WOULD BE TO CORRECT, TO BIAS CORRECT,  
01:37PM 12 LET'S SAY.

01:37PM 13 AND ADAM IS SAYING THAT HIS OPINION BASED ON THE DATA  
01:37PM 14 WOULD BE THAT THAT WOULD NOT BE A SOLUTION TO THE PROBLEM  
01:37PM 15 BECAUSE SOME RESULTS MIGHT BE CORRECTED APPROPRIATELY BY A BIAS  
01:37PM 16 CORRECTION, BUT CORRECT RESULTS WOULD THEN BE MADE INCORRECT IF  
01:37PM 17 IT WAS APPLIED.

01:37PM 18 Q. OKAY. AND IS THAT WHAT IS BEING DISCUSSED IN THE TOP  
01:37PM 19 EMAIL ON THIS PAGE?

01:37PM 20 AND, MS. WACHS, IF WE CAN ZOOM IN ON THAT?

01:37PM 21 A. I CAN SEE IT, YES.

01:37PM 22 Q. AND THIS IS AN EMAIL FROM YOU ON APRIL 3RD; IS THAT RIGHT?

01:37PM 23 A. THAT'S CORRECT.

01:38PM 24 Q. OKAY. AND YOU SAY, "LOOKING AT THESE DATA, I'M NOT SURE  
01:38PM 25 THAT COMING UP WITH A BIAS CORRECTION WOULD FIX THE PROBLEMS

01:38PM 1 WITH TSH AND FT4."

01:38PM 2 SO AM I UNDERSTANDING CORRECTLY THAT A BIAS CORRECTION

01:38PM 3 WILL WORK IN A CASE WHERE A TEST IS CONSISTENTLY REPORTING,

01:38PM 4 SAY, A CERTAIN AMOUNT TOO LOW OR A CERTAIN AMOUNT TOO HIGH?

01:38PM 5 A. CORRECT. SO THE USE OF THE TERM BIAS CORRECTION HERE

01:38PM 6 WOULD INDICATE THAT FOR SOME REASON A LAB TEST IS CONSISTENTLY

01:38PM 7 ERRING IN A CERTAIN MANNER, EITHER HIGH OR LOW, AND YOU'RE

01:38PM 8 GOING TO MATHEMATICALLY CORRECT THAT BY APPLYING A NUMBER TO

01:38PM 9 TAKE THOSE LOW RESULTS AND MAKE THEM CORRECT OR TAKE A HIGH

01:38PM 10 RESULT AND MAKE THEM CORRECT.

01:38PM 11 BUT IT WOULD BE APPLIED IN A MANNER THAT YOU SUGGESTED,

01:38PM 12 WHICH IS THAT WHEN THE FAILURE -- WHEN THE INACCURACY WAS

01:38PM 13 CONSISTENT.

01:38PM 14 Q. SO WHAT WAS IT ABOUT THIS SITUATION, THEN, THE PROBLEMS

01:39PM 15 WITH TSH AND FT4 THAT MEANT THAT YOU COULDN'T APPLY THAT KIND

01:39PM 16 OF ADJUSTMENT TO FIX IT?

01:39PM 17 A. BECAUSE THE TEST WAS OFFERING ACCURATE RESULTS SOMETIMES

01:39PM 18 AND INACCURATE RESULTS OTHER TIMES.

01:39PM 19 SO THE BIAS -- TO APPLY A BIAS CORRECTION IN THAT CASE

01:39PM 20 WOULD BE TO RENDER CERTAIN CORRECT RESULTS INCORRECT.

01:39PM 21 Q. SO IF A TEST PERFORMS TOO INCONSISTENTLY, A BIAS

01:39PM 22 CORRECTION WON'T FIX THE PROBLEM?

01:39PM 23 A. THAT'S CORRECT.

01:39PM 24 Q. THANK YOU, MS. WACHS. WE CAN TAKE THAT DOWN.

01:39PM 25 LET'S TALK ABOUT QUALITY CONTROL. WERE YOU INVOLVED IN

01:39PM 1 QUALITY CONTROL FOR THERANOS DEVICES DURING YOUR TIME AT THE  
01:39PM 2 COMPANY?

01:39PM 3 A. I PLAYED A ROLE IN THAT.

01:39PM 4 Q. WHAT WAS YOUR ROLE IN CONNECTION WITH QC?

01:39PM 5 A. I MONITORED IT, I SURVEYED IT. WHEN IT WAS ISSUES OF  
01:39PM 6 QUALITY CONTROL WERE BROUGHT TO MY ATTENTION BY THE PEOPLE  
01:39PM 7 RUNNING THE TESTS, I WOULD LOOK AT THE DATA, AND I WOULD BRING  
01:39PM 8 IT TO OTHER PEOPLE'S ATTENTION AT THE COMPANY.

01:40PM 9 Q. AND WHAT WAS THE FUNCTION OF QUALITY CONTROL AT THERANOS?

01:40PM 10 A. THE FUNCTION OF QUALITY CONTROL AT THERANOS WAS THE SAME,  
01:40PM 11 SOUGHT TO ACHIEVE THE SAME FUNCTION THAT QUALITY CONTROL SERVES  
01:40PM 12 IN ANY CASE, AND THAT IS TO ASCERTAIN, DETERMINE WHETHER A LAB  
01:40PM 13 TEST IS RUN INCORRECTLY OR NOT BEFORE IT'S USED OR AS IT'S USED  
01:40PM 14 ON PATIENTS.

01:40PM 15 Q. AND JUST IN BASIC TERMS, HOW DOES QUALITY CONTROL ACHIEVE  
01:40PM 16 THAT?

01:40PM 17 A. QUALITY CONTROL INDICATES THAT YOU HAVE A GOLD STANDARD,  
01:40PM 18 EITHER A KNOWN -- IN THE CASE OF A LAB TEST WHICH GIVES  
01:40PM 19 POSITIVE OR NEGATIVE RESULTS. THAT WOULD MEAN A KNOWN NEGATIVE  
01:40PM 20 AND A KNOWN POSITIVE. THEY WOULD BE RUN TO DETERMINE WHAT --  
01:40PM 21 THE TEST BETTER CALL THAT POSITIVE OR NEGATIVE OR THE TEST IS  
01:40PM 22 NOT RUNNING CORRECTLY, SO WE HAVE CONTROLLED FOR IT.

01:40PM 23 IN THE CASE OF A TEST THAT GENERATES A NUMBER, YOU WOULD  
01:40PM 24 PURCHASE THESE CONTROLS, THESE GOLD STANDARDS, AND THEY WOULD  
01:41PM 25 COME WITH RANGES THAT WOULD BE DEEMED ACCEPTABLE.

01:41PM 1 SO YOU WOULD RUN THAT STANDARD, THAT CONTROL, AND EXPECT A  
01:41PM 2 CERTAIN VALUE. AND IF YOU DIDN'T SEE IT OR YOU SAW SOMETHING  
01:41PM 3 FAR AWAY FROM THAT VALUE, IT WOULD TELL YOU SOMETHING IS WRONG  
01:41PM 4 WITH THE LABORATORY TESTS, ALERT SO TO SPEAK.

01:41PM 5 Q. DURING YOUR TIME AT THERANOS, DID YOU BECOME FAMILIAR WITH  
01:41PM 6 HOW THE EDISON PERFORMED ON QUALITY CONTROL TESTS?

01:41PM 7 A. THE EDISON PERFORMED VERY POORLY WITH REGARD TO QUALITY  
01:41PM 8 CONTROL TESTS.

01:41PM 9 Q. AND WAS THAT THE CASE THROUGHOUT YOUR TIME AT THE COMPANY?

01:41PM 10 A. THROUGHOUT MY TIME AT THE COMPANY MY RECOLLECTION IS THAT  
01:41PM 11 THAT WAS THE CASE.

01:41PM 12 Q. AND WHEN YOU SAY IT PERFORMED POORLY, HOW WOULD YOU  
01:41PM 13 COMPARE ITS PERFORMANCE TO THE NON-THERANOS DEVICES THAT YOU  
01:41PM 14 HAD USED PREVIOUSLY?

01:41PM 15 A. EXTREMELY POORLY.

01:42PM 16 NUMERICALLY -- I HAD THE OPPORTUNITY TO LOOK AT EMAILS IN  
01:42PM 17 THIS BINDER, AND SO I KNOW THAT, LIKE, THE AVERAGE QUALITY  
01:42PM 18 CONTROL FAILURE RATE --

01:42PM 19 MR. CAZARES: OBJECTION. HEARSAY.

01:42PM 20 BY MR. BOSTIC:

01:42PM 21 Q. LET'S WAIT, DR. PANDORI, UNTIL WE GET TO THAT EXHIBIT THAT  
01:42PM 22 YOU'RE TALKING ABOUT.

01:42PM 23 A. OKAY.

01:42PM 24 Q. FOR NOW LET ME JUST ASK YOU IN GENERAL TERMS, DID THE  
01:42PM 25 THERANOS ANALYZER PERFORM BETTER OR WORSE THAN THE NON-THERANOS

01:42PM 1 DEVICES THAT YOU WERE FAMILIAR WITH?

01:42PM 2 A. THE THERANOS DEVICES WORKED MUCH WORSE.

01:42PM 3 Q. CAN I ASK YOU TO TURN TO EXHIBIT 5767 IN YOUR BINDER.

01:42PM 4 A. I'M THERE.

01:42PM 5 Q. OKAY. IS THIS AN EMAIL EXCHANGE BETWEEN YOU AND

01:42PM 6 MR. BALWANI RELATING TO THE OPERATIONS OF THE LAB?

01:42PM 7 A. YES, THIS IS AN EXCHANGE BETWEEN SUNNY BALWANI AND MYSELF

01:43PM 8 ABOUT LOGISTICAL OPERATIONS AT THE LABORATORY.

01:43PM 9 MR. BOSTIC: YOUR HONOR, THE GOVERNMENT OFFERS 5767.

01:43PM 10 MR. CAZARES: ONE MOMENT, YOUR HONOR.

01:43PM 11 (PAUSE IN PROCEEDINGS.)

01:43PM 12 MR. CAZARES: NO OBJECTION.

01:43PM 13 THE COURT: IT'S ADMITTED. IT MAY BE PUBLISHED.

01:43PM 14 (GOVERNMENT'S EXHIBIT 5767 WAS RECEIVED IN EVIDENCE.)

01:43PM 15 BY MR. BOSTIC:

01:43PM 16 Q. LET'S START ON PAGE 1. AND IF WE CAN LOOK AT THE MIDDLE

01:43PM 17 OF THE PAGE WITH YOUR EMAIL TO MR. BALWANI.

01:43PM 18 SO ON JANUARY 30TH YOU WRITE, "SUNNY,

01:43PM 19 "UPDATE.

01:43PM 20 "I FOLLOWED SPECIMENS THROUGH THE PROCESS, ON FOOT,

01:43PM 21 ESSENTIALLY ALL DAY."

01:43PM 22 DO YOU SEE THAT?

01:43PM 23 A. I SEE IT.

01:43PM 24 Q. AND THEN YOU REPORT A NUMBER OF ISSUES THAT YOU OBSERVED;

01:43PM 25 IS THAT RIGHT?

01:43PM 1 A. THAT'S CORRECT.

01:43PM 2 Q. AND CAN YOU EXPLAIN TO US WHY YOU WERE TRACKING SPECIMENS

01:43PM 3 AND WHY YOU SENT THIS EMAIL TO MR. BALWANI?

01:43PM 4 A. ONE OF MY ROLES AS LABORATORY DIRECTOR WAS TO MAKE SURE

01:44PM 5 THAT THE PROCESSES WERE RUNNING SMOOTHLY.

01:44PM 6 THE IMPORTANCE OF THAT IS THAT YOU NEED TO GET LAB RESULTS

01:44PM 7 TURNED AROUND IN A REASONABLE AMOUNT OF TIME, AND I WANTED TO

01:44PM 8 MAKE SURE THAT THERE WERE -- THERE WAS NOTHING -- NO BARRIERS

01:44PM 9 THAT COULD BE REMOVED WITH REGARD TO TURNAROUND TIME.

01:44PM 10 AND IF THERE WERE BARRIERS, WHAT WERE THEY?

01:44PM 11 Q. SO YOUR MAIN GOAL HERE WAS IMPROVING THE EFFICIENCY OF THE

01:44PM 12 LAB; IS THAT FAIR?

01:44PM 13 A. THAT'S CORRECT.

01:44PM 14 Q. LET'S LOOK AT WHAT YOU REPORTED IN TERMS OF TURNAROUND

01:44PM 15 TIME. AND YOU SAY IN YOUR EMAIL, "TODAY, 4 SPECIMENS ARRIVED,

01:44PM 16 WITH A TOTAL REQUISITION OF 14 TESTS."

01:44PM 17 IS THAT RIGHT?

01:44PM 18 A. THAT'S CORRECT.

01:44PM 19 Q. FIRST OF ALL, JUST AS AN ASIDE, HOW DOES THAT TEST VOLUME

01:44PM 20 COMPARE TO WHAT YOU WERE USED TO WORKING AT PREVIOUS LABS?

01:44PM 21 A. IT'S MUCH, MUCH LOWER. MUCH LOWER.

01:45PM 22 Q. OKAY. THOSE 4 SPECIMENS AND 14 TESTS, YOU THEN REPORT HOW

01:45PM 23 THEY RESULTED OUT IN THE NEXT LINE; IS THAT CORRECT?

01:45PM 24 A. IN THE NEXT LINE I'M INDICATING THE TURNAROUND TIMES THAT

01:45PM 25 I TIMED ON MY STOPWATCH.

01:45PM 1 Q. OKAY. AND YOU SAY FOR THE 3 OF 4 SPECIMENS THAT ACTUALLY  
01:45PM 2 COMPLETED AND RESULTED OUT, THE TURNAROUND TIMES WERE 9.5, 9.5,  
01:45PM 3 AND 7 HOURS RESPECTIVELY?

01:45PM 4 A. YES.

01:45PM 5 Q. LET'S LOOK AT THE BOTTOM LINE ON THIS PAGE.

01:45PM 6 YOU SAY, "DELAYS TODAY INCLUDED:"

01:45PM 7 IT SAYS, "CALCIUM FAILED QC ON MULTIPLE OCCASIONS DUE TO  
01:45PM 8 TECAN DILUTION PROBLEMS IN NORMANDY."

01:45PM 9 DO YOU SEE THAT?

01:45PM 10 A. I SEE THAT.

01:46PM 11 Q. HOW DID THESE MULTIPLE CALCIUM QC FAILURES AFFECT WHAT YOU  
01:46PM 12 WERE FOCUSSED ON, THE EFFICIENCY AND TURNAROUND TIME AT THE  
01:46PM 13 LAB?

01:46PM 14 A. WHEN QC FAILURES OCCUR, THEY INDICATE THAT THE EQUIPMENT  
01:46PM 15 IS NOT OPERATING PROPERLY, SO YOU HAVE TO TRY RUNNING QC AGAIN  
01:46PM 16 TO SEE IF IT WAS JUST A PROBLEM WITH QC OR IF THERE MIGHT BE A  
01:46PM 17 SYSTEMATIC PROBLEM WITH THE EQUIPMENT OR THE LAB TEST.

01:46PM 18 RERUNNING QC TAKES TIME, AND THAT WOULD LENGTHEN  
01:46PM 19 TURNAROUND TIMES.

01:46PM 20 IF THERE IS A PROBLEM WITH THE MACHINE THAT IS DETECTED  
01:46PM 21 BECAUSE THE CONTROLS ARE TELLING YOU THERE IS SOMETHING WRONG,  
01:46PM 22 AND YOU WOULD HAVE TO TROUBLESHOOT THAT. AND IF THAT COULD BE  
01:46PM 23 DONE IN A REASONABLE AMOUNT OF TIME, WELL, NO MATTER HOW LONG  
01:46PM 24 THAT TOOK, THAT WOULD LENGTHEN TURNAROUND TIMES AS WELL.

01:46PM 25 Q. OKAY. YOUR EMAIL MENTIONS THAT THESE QC FAILURES WERE

01:46PM 1 APPARENTLY DUE TO A TECAN DILUTION PROBLEM?

01:46PM 2 A. THAT'S WHAT IT SAYS HERE, YES.

01:46PM 3 Q. LET ME ASK FOR THE FDA APPROVED NON-THERANOS TESTS THAT

01:47PM 4 THE COMPANY DID, DID THEY DEPEND ON USE OF THE TECAN DEVICE?

01:47PM 5 A. NO.

01:47PM 6 Q. SO THIS PROBLEM WOULD HAVE BEEN AVOIDED USING THE FDA

01:47PM 7 APPROVED THIRD PARTY DEVICES?

01:47PM 8 A. IT WOULDN'T HAVE EXISTED IF YOU RAN FDA CLEARED DEVICES,

01:47PM 9 BUT YOU WOULD HAVE HAD TO HAVE DONE A VENOUS DRAW TO MAKE THAT

01:47PM 10 HAPPEN, V-E-N-O-U-S, DRAW TO MAKE THAT HAPPEN.

01:47PM 11 Q. DID YOU SEE MULTIPLE QUALITY CONTROL FAILURES DURING YOUR

01:47PM 12 TIME AT THERANOS?

01:47PM 13 A. YES.

01:47PM 14 Q. WHEN YOU WERE AT THE COMPANY, DID YOU WORK EVER ON DEMOS

01:47PM 15 OF THERANOS'S TECHNOLOGY FOR VIP GUESTS?

01:47PM 16 A. YES.

01:47PM 17 Q. I'LL ASK YOU TO LOOK AT TAB 1522, PLEASE, IN YOUR BINDER.

01:48PM 18 A. I SEE IT.

01:48PM 19 Q. AND IS THIS AN EMAIL INCLUDING YOU RELATING TO ANOTHER QC

01:48PM 20 FAILURE AFFECTING ONE OF THOSE DEMOS?

01:48PM 21 A. YES.

01:48PM 22 MR. BOSTIC: YOUR HONOR, THE GOVERNMENT OFFERS 1522.

01:48PM 23 MR. CAZARES: NO OBJECTION.

01:48PM 24 THE COURT: IT'S ADMITTED. IT MAY BE PUBLISHED.

01:48PM 25 (GOVERNMENT'S EXHIBIT 1522 WAS RECEIVED IN EVIDENCE.)



01:48PM 1 BY MR. BOSTIC:

01:48PM 2 Q. ALL RIGHT. LET'S ZOOM IN ON THE BOTTOM HALF FIRST.

01:48PM 3 DR. PANDORI, DO YOU SEE THAT THIS STARTS WITH AN EMAIL

01:48PM 4 FROM ERIKA CHEUNG TO YOU, DR. ROSENDORFF, AND JAMIE LIU AT

01:48PM 5 THERANOS; IS THAT RIGHT?

01:48PM 6 A. YES.

01:48PM 7 Q. AND MS. CHEUNG WRITES, "HI ADAM,

01:48PM 8 "I RERAN THE LEVEL 1 QC FOR TSH, IT FAILED AGAIN."

01:48PM 9 DO YOU SEE THAT?

01:48PM 10 A. I SEE THAT.

01:49PM 11 Q. AFTER A QUALITY CONTROL FAILURE LIKE THIS FOR THE ASSAY

01:49PM 12 TSH, WOULD IT BE POSSIBLE TO RUN A PATIENT SAMPLE ON THAT

01:49PM 13 DEVICE?

01:49PM 14 A. NOT AT THAT POINT, NOPE.

01:49PM 15 Q. AND YOU THEN RESPOND TO MS. CHEUNG'S EMAIL, RESPONDING

01:49PM 16 JUST TO DR. ROSENDORFF, AND YOU SAY "ALERT.

01:49PM 17 "THE TSH IS FOR A POTENTIAL INVESTOR."

01:49PM 18 DO YOU SEE THAT?

01:49PM 19 A. I DO.

01:49PM 20 Q. AND WHY DID YOU THINK IT WAS IMPORTANT FOR DR. ROSENDORFF

01:49PM 21 TO KNOW THAT THIS WAS THE TEST SAMPLE OF A POTENTIAL INVESTOR?

01:49PM 22 A. THE PRODUCT MANAGERS AND MANAGEMENT AT THERANOS WERE

01:49PM 23 ALWAYS APPLYING A HIGHER LEVEL OF PRESSURE AND IMPORTANCE TO

01:49PM 24 GETTING SPECIMENS FROM SUCH INDIVIDUALS OUT IN A RAPID MANNER.

01:49PM 25 Q. AND WHO WERE THE PRODUCT MANAGERS AT THERANOS? WHAT GROUP

01:49PM 1 OF PEOPLE ARE WE TALKING ABOUT?

01:49PM 2 A. WOULD YOU LIKE MET TO TRY AND REMEMBER THEIR NAMES?

01:49PM 3 Q. OR COULD YOU DESCRIBE THEIR ROLE IN THE COMPANY? ARE WE

01:50PM 4 TALKING ABOUT TECHNICAL PERSONNEL WHO WORKED IN THE LAB, FOR

01:50PM 5 EXAMPLE?

01:50PM 6 A. THEY WERE NOT TECHNICAL PERSONNEL.

01:50PM 7 THE ONES THAT I KNEW ALL HAD BUSINESS BACKGROUNDS.

01:50PM 8 Q. AND DO YOU KNOW WHO THEY REPORTED TO AT THE COMPANY?

01:50PM 9 A. INDIVIDUALLY, I BELIEVE THEY REPORTED TO SUNNY BALWANI.

01:50PM 10 Q. THAT WAS YOUR UNDERSTANDING?

01:50PM 11 A. THAT WAS MY UNDERSTANDING.

01:50PM 12 Q. SO YOU MENTIONED THAT THERE WAS A DESIRE OR INSTRUCTIONS

01:50PM 13 FROM THOSE INDIVIDUALS THAT VIP SAMPLES WERE TO BE HANDLED

01:50PM 14 QUICKLY.

01:50PM 15 HOW WAS THAT IMPLEMENTED IN THE LAB?

01:50PM 16 A. HOW IS WHAT IMPLEMENTED? I'M SORRY.

01:50PM 17 Q. AM I RIGHT THAT YOU TESTIFIED THAT THERE WAS A DESIRE THAT

01:50PM 18 THOSE SAMPLES BE TURNED AROUND QUICKLY?

01:50PM 19 A. YES.

01:50PM 20 Q. HOW WAS THAT ACCOMPLISHED?

01:50PM 21 A. BY PAYING -- BY PUTTING THEM IN FRONT OF OTHER TESTS, FOR

01:51PM 22 EXAMPLE.

01:51PM 23 SO LET'S SAY THERE WERE SEVEN OR EIGHT OR NINE PEOPLE

01:51PM 24 WAITING TO BE TESTED ON A GIVEN DAY, THEY WOULD BE PUT IN FRONT

01:51PM 25 OF THE LINE.

01:51PM 1 Q. DID YOU AGREE WITH THAT PRACTICE AS LAB DIRECTOR?

01:51PM 2 A. NO.

01:51PM 3 Q. WHY NOT?

01:51PM 4 A. WELL, FOR ONE, IT SORT OF MISREPRESENTS THE RAPIDITY OR

01:51PM 5 EFFICIENCY OF THE TRUE PROCESS BECAUSE TRUE PROCESSES ARE

01:51PM 6 ALWAYS GOING TO BE A LOT OF SPECIMENS IN THE LAB AT A GIVEN

01:51PM 7 TIME.

01:51PM 8 SO IT WOULDN'T ACCURATELY NECESSARILY REFLECT THE

01:51PM 9 TURNAROUND TIME.

01:51PM 10 ADDITIONALLY, IT STRIKES ME AS A SPIRITUAL PROBLEM BECAUSE

01:51PM 11 YOU'RE TRYING TO GET A LAB RESULT OUT FOR ONE HUMAN BEING

01:51PM 12 BEFORE ANOTHER HUMAN BEING ONLY ON THE BASIS OF THE FACT THAT

01:51PM 13 THEY'RE A POTENTIAL INVESTOR.

01:51PM 14 Q. CAN I ASK YOU TO LOOK NEXT AT TAB 1528, PLEASE.

01:52PM 15 A. YEAH, I'M THERE.

01:52PM 16 Q. YOU'RE LOOKING AT A FEBRUARY 10TH EMAIL.

01:52PM 17 IS THIS AN EMAIL ABOUT ANOTHER QC FAILURE ON

01:52PM 18 FEBRUARY 11TH?

01:52PM 19 A. WHICH EMAIL? DID YOU WANT ME TO LOOK AT A SPECIFIC EMAIL

01:52PM 20 ON THIS PAGE?

01:52PM 21 Q. SURE.

01:52PM 22 LOOKING AT THE CHAIN AS A WHOLE, BUT I'LL DIRECT YOU TO

01:52PM 23 THE BOTTOM EMAIL, THE ORIGINAL ONE OF THE CHAIN.

01:52PM 24 A. AND YOU SAID 1528?

01:52PM 25 Q. 1528, UH-HUH.

01:52PM 1 A. OKAY. AT THE BOTTOM? YEAH, I SEE IT.

01:52PM 2 Q. AND IS THIS AN EMAIL CHAIN INCLUDING YOU AND OTHERS AT

01:52PM 3 THERANOS RELATING TO A QC FAILURE?

01:52PM 4 A. IT IS.

01:52PM 5 MR. BOSTIC: YOUR HONOR, THE GOVERNMENT OFFERS 1528.

01:52PM 6 MR. CAZARES: NO OBJECTION.

01:52PM 7 THE COURT: IT'S ADMITTED, AND IT MAY BE PUBLISHED.

01:52PM 8 (GOVERNMENT'S EXHIBIT 1528 WAS RECEIVED IN EVIDENCE.)

01:52PM 9 BY MR. BOSTIC:

01:52PM 10 Q. LET'S START WITH THE EMAIL AT THE BOTTOM OF PAGE 1.

01:53PM 11 THIS IS THE DAY AFTER WHAT WE WERE JUST LOOKING AT; IS

01:53PM 12 THAT RIGHT?

01:53PM 13 A. YOU SAID FEBRUARY 10TH, BUT I DON'T SEE THAT IN ANY OF THE

01:53PM 14 DOCUMENTS HERE.

01:53PM 15 Q. SORRY. THIS ONE IS FEBRUARY 11TH; IS THAT RIGHT?

01:53PM 16 A. THAT'S CORRECT.

01:53PM 17 Q. AND IF YOU TURN BACK TO 1522 THAT WE WERE JUST LOOKING AT.

01:53PM 18 A. YES.

01:53PM 19 Q. WAS THAT ON FEBRUARY 10TH, THE DAY BEFORE?

01:53PM 20 A. YES.

01:53PM 21 Q. OKAY. CAN YOU EXPLAIN FOR US WHAT IS HAPPENING HERE AND

01:53PM 22 WHAT MS. CHEUNG IS REPORTING TO YOU AND DR. ROSENDORFF?

01:53PM 23 A. YOU'RE ASKING ME WHAT THIS IS CONVEYING?

01:53PM 24 Q. YES, ORIENT US AS TO WHY THIS WAS SENT?

01:54PM 25 A. THIS WAS SENT BECAUSE ERIKA CHEUNG WAS CONCERNED ABOUT

01:54PM 1 GETTING SPECIMENS COMPLETED IN A TIMELY MANNER.

01:54PM 2 Q. AND HAD SHE RUN INTO A SPECIFIC PROBLEM THAT WAS  
01:54PM 3 PREVENTING THAT FROM HAPPENING?

01:54PM 4 A. YEAH. ERIKA WAS TRYING TO RUN SPECIMENS FOR TSH, BUT IN  
01:54PM 5 ORDER -- WHEN SHE SOUGHT TO RUN THE TESTS ON THOSE MACHINES,  
01:54PM 6 THE QUALITY CONTROL FAILED, THAT MEANT THAT IT HAD TO BE DONE  
01:54PM 7 AGAIN, SOMETHING ELSE HAD TO BE DONE, SO MORE TIME WAS GOING TO  
01:54PM 8 BE TAKEN.

01:54PM 9 SHE'S TELLING US THIS IN THE CONTEXT OF THE FACT THAT EVEN  
01:54PM 10 MORE SPECIMENS FOR THAT TEST ARE COMING IN, SO THE PROBLEM WILL  
01:54PM 11 NOW BE COMPOUNDED BECAUSE NOT ONLY DOES THE TEST NOT WORK, BUT  
01:54PM 12 MORE SPECIMENS ARE COMING IN, AND SHE STILL HAS A LOT OF WORK  
01:54PM 13 TO DO, AND HER SHIFT IS APPROACHING, AND SO SHE WANTS TO --  
01:54PM 14 BECAUSE THERE'S STILL A LOT OF WORK THAT NEEDS TO BE DONE TO  
01:54PM 15 GET THINGS UP AND RUNNING, NOT ONLY RUNNING QUALITY CONTROL,  
01:54PM 16 BUT ALSO RECREATING WHAT ARE CALLED CALIBRATION CURVES, WHICH  
01:55PM 17 ARE ANOTHER PART OF THE QUALITY ASPECT OF RUNNING THE TEST.

01:55PM 18 SO SHE'S EXPRESSING THAT THERE'S A NUMBER OF BARRIERS,  
01:55PM 19 INCLUDING QUALITY CONTROL PASSING, THAT ARE GOING TO PREVENT US  
01:55PM 20 FROM GETTING THESE SPECIMENS RUN IN A TIMELY MANNER.

01:55PM 21 Q. OKAY. LET'S MOVE UP IN THE CHAIN AND LOOK AT THE  
01:55PM 22 RESPONSES TO THAT.

01:55PM 23 FIRST, AT THE BOTTOM OF THAT COLLECTION DO YOU SEE AN  
01:55PM 24 EMAIL FROM DR. ROSENDORFF RESPONDING TO MS. CHEUNG?

01:55PM 25 A. YES.

01:55PM 1 Q. AND HE SAYS THAT SHE SHOULD PROCESS THE SAMPLES THE  
01:55PM 2 FOLLOWING DAY BECAUSE THAT'S THE SAFEST COURSE OF ACTION AS THE  
01:55PM 3 RIGHT RESULT TOMORROW IS BETTER THAN A FAST INACCURATE RESULT.  
01:55PM 4 DO YOU SEE THAT?  
01:55PM 5 A. I SEE THAT.  
01:55PM 6 Q. DID YOU AGREE WITH THAT DECISION AND APPROACH?  
01:55PM 7 A. I SURE DO.  
01:55PM 8 Q. LET'S LOOK AT YOUR EMAIL. AND THEN YOU RESPOND JUST TO  
01:55PM 9 DR. ROSENDORFF; IS THAT CORRECT?  
01:55PM 10 A. CORRECT.  
01:55PM 11 Q. AND YOU SAY, "GREAT.  
01:55PM 12 "I GUESS MY GROWING CONCERN IS WHY THESE FAIL SO OFTEN."  
01:55PM 13 WHAT DO YOU REMEMBER FROM THIS TIME AT THE COMPANY ABOUT  
01:56PM 14 HOW FREQUENTLY YOU SAW THIS KIND OF QUALITY CONTROL FAILURE?  
01:56PM 15 A. I WAS SEEING QUALITY CONTROL FAILURES HAPPEN SO OFTEN THAT  
01:56PM 16 TWO THINGS CAME TO MIND.  
01:56PM 17 ONE IS THAT THE TURNAROUND TIMES FOR GETTING RESULTS OUT  
01:56PM 18 THAT THE COMPANY WAS SEEKING WERE GOING TO BE VERY, VERY  
01:56PM 19 DIFFICULT TO ACHIEVE.  
01:56PM 20 SECONDLY, WHEN QUALITY CONTROL IS FAILING, THAT MEANS THAT  
01:56PM 21 THE TESTS ARE HAVING DIFFICULTY ACCURATELY MEASURING SOMETHING  
01:56PM 22 ON A ROUTINE BASIS.  
01:56PM 23 SO IT CALLED INTO MIND THE FACT THAT THE EQUIPMENT MIGHT  
01:56PM 24 NOT ONLY FAIL A LOT BUT BE INACCURATE.  
01:56PM 25 Q. AND WHEN A DEVICE FAILED QUALITY CONTROL, I THINK YOU

01:56PM 1 TESTIFIED THAT IT COULD NOT BE USED FOR PATIENT TESTING; IS  
01:56PM 2 THAT RIGHT?

01:56PM 3 A. CORRECT.

01:56PM 4 Q. DESPITE THAT, DID THIS POOR QUALITY CONTROL PERFORMANCE  
01:56PM 5 CAUSE YOU CONCERNS ABOUT THE ACCURACY OF RESULTS THAT WERE  
01:56PM 6 GOING OUT TO PATIENTS?

01:57PM 7 MR. CAZARES: OBJECTION. 702. NOT NOTICED.

01:57PM 8 THE COURT: OVERRULED.

01:57PM 9 BY MR. BOSTIC:

01:57PM 10 Q. WOULD YOU LIKE THE QUESTION AGAIN, DOCTOR?

01:57PM 11 A. NO, I HEARD THE QUESTION.

01:57PM 12 YOU ASKED ME IF IT LED TO MY CONCERN ABOUT THE ACCURACY OF  
01:57PM 13 TEST RESULTS THAT WERE GOING OUT FROM THAT EQUIPMENT?

01:57PM 14 AND THE ANSWER IS, YES, IT DID RESULT IN A CONCERN ON MY  
01:57PM 15 PART.

01:57PM 16 SO THE EQUIPMENT QUALITY CONTROLS ARE BEING RUN, AND  
01:57PM 17 THEY'RE SHOWING RESULTS THAT ARE NUMERICALLY OFF BY ENOUGH THAT  
01:57PM 18 IT'S NOT PASSING THE EQUIPMENT.

01:57PM 19 SO I DON'T WANT TO RUN A PATIENT SPECIMEN ON THAT.

01:57PM 20 Q. AND FOLLOWING THIS EXAMPLE, THIS IS STILL EARLY  
01:57PM 21 FEBRUARY 2014, DID YOU CONTINUE TO EXPERIENCE MORE QUALITY  
01:57PM 22 CONTROL FAILURES OF THE THERANOS EQUIPMENT?

01:57PM 23 A. YES.

01:57PM 24 Q. LET'S LOOK AT ANOTHER EXAMPLE. PLEASE TURN TO 1595 IN  
01:57PM 25 YOUR BINDER.

01:57PM 1 A. OKAY.

01:57PM 2 Q. AND ARE WE LOOKING HERE AT ANOTHER EMAIL, INCLUDING YOU,

01:58PM 3 FROM LATE FEBRUARY 2014 ADDRESSING A POSSIBLE SOLUTION TO THESE

01:58PM 4 QC FAILURES?

01:58PM 5 A. YES, THAT'S CORRECT.

01:58PM 6 MR. BOSTIC: OKAY. THE GOVERNMENT OFFERS 1595,

01:58PM 7 YOUR HONOR.

01:58PM 8 MR. CAZARES: NO OBJECTION.

01:58PM 9 THE COURT: IT'S ADMITTED. IT MAY BE PUBLISHED.

01:58PM 10 (GOVERNMENT'S EXHIBIT 1595 WAS RECEIVED IN EVIDENCE.)

01:58PM 11 BY MR. BOSTIC:

01:58PM 12 Q. IF WE STARTED AT THE BOTTOM OF THAT FIRST EMAIL, WE SEE A

01:58PM 13 MESSAGE FROM YOU ON FEBRUARY 27TH, 2014; IS THAT CORRECT?

01:58PM 14 A. YES, THAT'S CORRECT.

01:58PM 15 Q. AND THE SUBJECT IS REDUNDANCY.

01:58PM 16 AND YOU SAY, "ADAM,

01:58PM 17 "GIVEN THE FREQUENCY OF QC FAILURES FOR EDISON TESTS, AND

01:59PM 18 THE FREQUENCY WITH WHICH TESTS LIKE TSH ARE ORDERED

01:59PM 19 (APPROXIMATELY 33 PERCENT OF PATIENTS OVER THE LAST WEEK HAVE

01:59PM 20 HAD IT ORDERED), I WOULD LIKE TO CONSIDER WHETHER SOME

01:59PM 21 REDUNDANCY IS POSSIBLE."

01:59PM 22 CAN YOU EXPLAIN WHAT PROMPTED YOU TO SEND THIS EMAIL AND

01:59PM 23 WHAT YOU WERE SUGGESTING?

01:59PM 24 A. WELL, WHEN YOU'RE WORKING IN THE CONTEXT OF A PLACE LIKE

01:59PM 25 THERANOS, YOU KNOW, YOU ARE TRYING TO DEVELOP SOMETHING NEW AND



01:59PM 1 SO WHEN THERE ARE PROBLEMS, YOU WANT TO TRY AND FIX THAT, AND  
01:59PM 2 YOU WANT THIS TO WORK.

01:59PM 3 I HAD -- THERE HAD BEEN SOME KNOWLEDGE THAT I HAD, WHICH  
01:59PM 4 IMPLIED THAT SOME OF THE EDISON EQUIPMENT MIGHT WORK -- THIS IS  
01:59PM 5 EARLY -- SOME OF THE EDISON EQUIPMENT MIGHT WORK, SOME OF IT  
01:59PM 6 MIGHT NOT, AND THAT IF WE COULD TAKE THESE SPECIMENS AND RUN  
01:59PM 7 THEM ON MULTIPLE EQUIPMENT AT ONCE, THE EQUIPMENT THAT WAS  
01:59PM 8 PASSING QUALITY CONTROL COULD BE USED TO GENERATE A RESULT  
01:59PM 9 WHEREAS, YOU KNOW, THEN WE COULD GET THE RESULTS OUT FOR THE  
01:59PM 10 CLINICIAN AND THE PATIENT IN A TIMELY MANNER, AND WE WOULDN'T  
01:59PM 11 HAVE TO ASK FOR A REDRAW IN THAT CASE.

02:00PM 12 Q. OKAY. UNDERSTOOD.

02:00PM 13 YOU SAID AT THAT TIME THAT IT WAS YOUR UNDERSTANDING THAT  
02:00PM 14 SOME OF THE DEVICES MIGHT BE GOOD AND OTHERS MIGHT BE BAD; IS  
02:00PM 15 THAT RIGHT?

02:00PM 16 A. THAT WAS NOT 100 PERCENT CLEAR TO ME, BUT IT WAS A  
02:00PM 17 HYPOTHESIS ON MY PART. AND THERE WERE SOME OTHER PEOPLE IN THE  
02:00PM 18 COMPANY THAT THOUGHT THAT THAT MIGHT BE THE CASE.

02:00PM 19 Q. BASED ON YOUR OBSERVATIONS OVER TIME GOING FORWARD, DID  
02:00PM 20 THAT VIEW CHANGE?

02:00PM 21 A. THE QUALITY CONTROL REMAINED A PROBLEM FOR THE DURATION OF  
02:00PM 22 MY TIME AT THE COMPANY, SO I DON'T -- I CAN ONLY SAY THAT.

02:00PM 23 Q. DURING YOUR TIME AT THE COMPANY, WERE YOU EVER ABLE TO  
02:00PM 24 IDENTIFY, FOR EXAMPLE, A SUBSET OF EDISON DEVICES THAT NEVER  
02:00PM 25 FAILED QUALITY CONTROL OR ANYTHING LIKE THAT?

02:00PM 1 A. NO.

02:00PM 2 Q. SO CAN YOU EXPLAIN THEN HOW YOUR SUGGESTION WOULD WORK?

02:01PM 3 WHAT ARE YOU ACTUALLY PROPOSING?

02:01PM 4 A. THAT WE COULD RUN A SPECIMEN ON TWO, OR LET'S SAY TWO

02:01PM 5 EDISONS, AND RUN THE QUALITY CONTROLS AND REPORT THE RESULTS

02:01PM 6 OUT FROM THE EDISON THAT HAD PROPER AND ACCURATE QUALITY

02:01PM 7 CONTROL.

02:01PM 8 Q. LET'S LOOK AT MS. CHEUNG'S RESPONSE TO THAT SUGGESTION, IF

02:01PM 9 YOU LOOK AT THE TOP EMAIL.

02:01PM 10 SHE WRITES, "HI MARK,

02:01PM 11 "WE SHOULD HAVE NO PROBLEM CALIBRATING TWO SETS OF

02:01PM 12 MACHINES FOR RUNNING TWO PATIENT SAMPLES AT A TIME."

02:01PM 13 SHE THEN SAYS A COUPLE OF SENTENCES LATER, "JUST TO LET

02:01PM 14 YOU KNOW, THE ISSUE WITH QC FAILURES WE HAVE SEEN RECENTLY HAVE

02:01PM 15 BEEN DUE TO REAGENT/CARTRIDGE PROBLEMS. SO BEAR IN MIND, IF WE

02:02PM 16 CALIBRATE ON TWO SETS USING THE SAME LOT OF REAGENTS, THE QC'S

02:02PM 17 WILL STILL FAIL FOR BOTH SETS OF MACHINES."

02:02PM 18 DO YOU SEE THAT?

02:02PM 19 A. YES, I SEE THAT.

02:02PM 20 Q. CAN YOU EXPLAIN THAT FOR US? WHY WAS YOUR REDUNDANCY IDEA

02:02PM 21 NOT GOING TO ADDRESS THE PROBLEMS THAT WERE BEING SEEN AT THIS

02:02PM 22 TIME?

02:02PM 23 A. ERIKA IS SHARING WITH ME THAT SHE HAD INFORMATION OR DATA

02:02PM 24 TO INDICATE THAT THE PROBLEM WASN'T THE MACHINE, BUT THE

02:02PM 25 REAGENTS OR THE CHEMICALS THAT YOU PUT INTO THE MACHINE.

02:02PM 1 THE MACHINE JUST CAN'T RUN A LOT OF TESTS. IT NEEDS  
02:02PM 2 CHEMICALS TO BE PUT IN THERE. WE CALL THEM REAGENTS. I  
02:02PM 3 BELIEVE FOR EDISONS THEY WERE CALL CAPSYS CARTRIDGES.

02:02PM 4 SHE'S SAYING THAT SHE HAS INFORMATION THAT I DIDN'T HAVE  
02:02PM 5 THAT INDICATED THAT THOSE REAGENTS WERE THE PROBLEM AND THAT  
02:02PM 6 WHETHER WE PUT THOSE REAGENTS IN TWO MACHINES OR MORE, IT  
02:02PM 7 WOULDN'T SOLVE THE PROBLEM.

02:02PM 8 Q. AND DO YOU KNOW WHETHER THE REAGENTS THAT WERE USED FOR  
02:03PM 9 THESE TESTS WERE SOMETHING THAT THERANOS WAS CREATING OR  
02:03PM 10 SOMETHING THAT THERANOS WAS GETTING FROM OUTSIDE?

02:03PM 11 A. MY UNDERSTANDING IS THAT THERANOS WAS BUYING CHEMICALS  
02:03PM 12 FROM THE OUTSIDE AND THEN ASSEMBLING THEM TO THE REAGENT  
02:03PM 13 MIXTURE THAT WOULD GO INTO THE MACHINE.

02:03PM 14 Q. PLEASE LOOK AT TAB 1633 NEXT.

02:03PM 15 ACTUALLY, THIS HAS ALREADY BEEN ADMITTED, SO MAY WE  
02:03PM 16 PUBLISH, YOUR HONOR?

02:03PM 17 THE COURT: YES.

02:03PM 18 BY MR. BOSTIC:

02:03PM 19 Q. AND LET'S LOOK AT THE BOTTOM MESSAGE HERE ON PAGE 1.

02:03PM 20 DO YOU SEE AN EMAIL FROM LAGLY GEE, OR LAGLY GEE, TO YOU  
02:03PM 21 ON MARCH 28TH, 2014?

02:03PM 22 A. I SEE IT.

02:03PM 23 Q. AND HE SAYS, "MARK:

02:03PM 24 "THE OTHER DAY YOU ASKED FOR A NUMBER OF FAILED QC ELISA  
02:03PM 25 RUNS. FOR MARCH, 26 PERCENT RUNS FAILED."

02:03PM 1 DO YOU SEE THAT?

02:03PM 2 A. I SEE IT.

02:03PM 3 Q. IS THIS THE INFORMATION THAT YOU STARTED TO REFERENCE  
02:03PM 4 EARLIER ABOUT THE OVERALL FAILURE RATE?

02:04PM 5 A. IT IS IN FACT.

02:04PM 6 Q. LET'S FLIP TO THE NEXT PAGE AND ACTUALLY LOOK AT THOSE  
02:04PM 7 NUMBERS.

02:04PM 8 A. I'M THERE.

02:04PM 9 Q. OKAY. GIVE US ONE SECOND TO GET IT ON THE SCREEN.

02:04PM 10 DO YOU REMEMBER GETTING THIS INFORMATION IN MARCH 2014?

02:04PM 11 A. THE EMAIL REFRESHES MY MEMORY IN THAT REGARD.

02:04PM 12 Q. OKAY. AS LAB DIRECTOR AT THAT TIME, WHAT WAS YOUR  
02:04PM 13 REACTION TO SEEING THESE QC FAILURE NUMBERS?

02:04PM 14 A. I WAS DISAPPOINTED, UPSET, CONCERNED BECAUSE THESE ARE  
02:04PM 15 HIGH VALUES FOR A FREQUENCY OF QUALITY CONTROL FAILURE, AND  
02:04PM 16 IT'S EMBLEMATIC OF TWO POSSIBLE PROBLEMS FROM A DIAGNOSTIC LAB  
02:04PM 17 PERSPECTIVE, SEVERAL, BUT MOST IMPORTANTLY ACCURACY OF THE TEST  
02:04PM 18 BEING AN ISSUE, THE RELIABILITY OF THE TEST, BUT ALSO  
02:05PM 19 TURNAROUND TIME.

02:05PM 20 SO EVEN IF THE TEST IS SOMEHOW INACCURATE, HAVING TO  
02:05PM 21 CONSTANTLY RERUN QC WOULD MAKE YOU HAVE TO RERUN TESTS.

02:05PM 22 AND THAT TURNAROUND TIME SOUNDS LIKE, WELL, IT'S NOT A BIG  
02:05PM 23 DEAL, IT'S JUST GOING TO TAKE LONGER TO RERUN A LAB TEST.

02:05PM 24 BUT IF YOU HAVE TO RERUN A LAB TEST, SOMETIMES YOU HAVE TO  
02:05PM 25 GO BACK AND DO A REDRAW. SO IF YOU -- YOU'D HAVE TO GET

02:05PM 1 REDRAWN, AND SO THAT HAS IMPACTS FOR THE PATIENT AS WELL.

02:05PM 2 Q. SO YOU'RE DESCRIBING TWO SEPARATE PROBLEMS REALLY: ONE  
02:05PM 3 ABOUT EFFICIENCY AND SLOWING THINGS DOWN, AND ANOTHER ABOUT  
02:05PM 4 ACCURACY PROBLEMS FOR PATIENT TESTS; IS THAT RIGHT?

02:05PM 5 A. CORRECT.

02:05PM 6 Q. YOU SAID THAT YOU WERE, I THINK, DISAPPOINTED BY THESE  
02:05PM 7 NUMBERS.

02:05PM 8 CAN YOU HELP US UNDERSTAND WHY THAT WAS? WHAT NUMBERS  
02:05PM 9 WERE YOU USED TO OR WHAT NUMBERS WERE YOU HOPING TO SEE IN THIS  
02:05PM 10 KIND OF QC TESTING?

02:06PM 11 A. I'M MORE USED TO A RATE OF CONTROL FAILURE BEING -- AND  
02:06PM 12 THEY VARY FROM TEST TO TEST, BUT REALLY BEING MORE THAN IN THE  
02:06PM 13 1 PERCENT OR LESS RANGE.

02:06PM 14 Q. WHEREAS HERE WE SEE THAT SOME ASSAYS WERE FAILING AT A  
02:06PM 15 RATE OF 23 PERCENT, OR 30 PERCENT, OR 45 PERCENT, OR EVEN ABOVE  
02:06PM 16 50 PERCENT; IS THAT RIGHT?

02:06PM 17 A. CORRECT.

02:06PM 18 Q. DOES A QC FAILURE RATE OF 50 PERCENT, OR EVEN 26 PERCENT,  
02:06PM 19 CAUSE YOU CONCERNS AS A LAB DIRECTOR ABOUT THE ACCURACY OF  
02:06PM 20 PATIENT RESULTS?

02:06PM 21 A. WELL, IN THE EXAMPLE WHERE THERE'S A -- WHERE THE CONTROL  
02:06PM 22 IS FAILING 51.3 PERCENT OF THE TIME, THAT MEANS THAT -- THAT'S  
02:06PM 23 LIKE FLIPPING A COIN, SO IF YOU HAVE TAILS, THE MACHINE WORKS,  
02:06PM 24 IF YOU HAVE HEADS, IT DOESN'T.

02:06PM 25 Q. AND IS THAT A FAVORABLE PERCENTAGE FOR A MEDICAL LAB TEST

02:07PM 1 OR NOT?

02:07PM 2 A. IT'S NOT FAVORABLE.

02:07PM 3 Q. WE'RE LOOKING AT INFORMATION FROM MARCH OF 2014 ONLY; IS

02:07PM 4 THAT RIGHT?

02:07PM 5 A. CORRECT.

02:07PM 6 Q. SO I'LL ASK YOU, BASED ON YOUR EXPERIENCE THROUGHOUT YOUR

02:07PM 7 TIME AT THE COMPANY, WAS THIS AN EXCEPTIONALLY BAD MONTH OR IS

02:07PM 8 THIS TYPICAL OF THE PROBLEMS WITH QC THAT YOU SAW AT THE

02:07PM 9 COMPANY?

02:07PM 10 A. WITHOUT ANY MORE NUMBERS IN FRONT OF ME, MY RECOLLECTION

02:07PM 11 IS THAT THIS WAS TYPICAL.

02:07PM 12 Q. LET'S LOOK AT ONE MORE EXAMPLE OF THIS.

02:07PM 13 TAB 5771, PLEASE.

02:07PM 14 A. YES.

02:07PM 15 Q. AND WE'RE MOVING FORWARD IN TIME.

02:07PM 16 IS THIS EMAIL DATED APRIL 16TH, 2014?

02:07PM 17 A. IT IS.

02:07PM 18 Q. AND DOES THIS RELATE TO ADDITIONAL DISCUSSION OF EDISON QC

02:08PM 19 FAILURES?

02:08PM 20 A. IT IS.

02:08PM 21 MR. BOSTIC: YOUR HONOR, THE GOVERNMENT OFFERS 5771.

02:08PM 22 MR. CAZARES: NO OBJECTION.

02:08PM 23 THE COURT: IT'S ADMITTED. IT MAY BE PUBLISHED.

02:08PM 24 (GOVERNMENT'S EXHIBIT 5771 WAS RECEIVED IN EVIDENCE.)

02:08PM 25 BY MR. BOSTIC:

02:08PM 1 Q. OKAY. LET'S START WITH THAT BOTTOM EMAIL. IT'S FROM  
02:08PM 2 ROMINA RIENER AT THERANOS.

02:08PM 3 DO YOU REMEMBER THAT?

02:08PM 4 A. YES.

02:08PM 5 Q. AND SHE SAYS TO YOU AND DR. ROSENDORFF, "I WANTED TO LET  
02:08PM 6 YOU KNOW THAT TOTAL TESTOSTERONE IS FAILING QC'S. YESTERDAY  
02:08PM 7 EACH READER HAD TWO CONSECUTIVE FAILURES."

02:08PM 8 DO YOU SEE THAT?

02:08PM 9 A. I DO.

02:08PM 10 Q. AND DO YOU RECALL PROBLEMS WITH THE TESTOSTERONE ASSAY ON  
02:08PM 11 THE EDISON AROUND THIS TIME PERIOD?

02:08PM 12 A. THE EMAILS REFRESH MY MEMORY IN THAT REGARD.

02:08PM 13 Q. WOULD THIS KIND OF QC FAILURE RAISE THOSE TWO CONCERNS IN  
02:08PM 14 YOUR MIND, THE CONCERN ABOUT DELAYS IN THE LAB AND ALSO TESTING  
02:09PM 15 ACCURACY?

02:09PM 16 A. YEAH. THIS MEANS THAT THE EQUIPMENT IS FAILING PRETTY  
02:09PM 17 FREQUENTLY, AND THAT MEANS THAT THERE MIGHT BE QUESTIONS ABOUT  
02:09PM 18 HOW ACCURATE THESE MACHINES -- HOW WELL THESE MACHINES STAY IN  
02:09PM 19 FUNCTION PROPERLY, BUT ALSO IT MEANS THAT IF YOU HAVE TO KEEP  
02:09PM 20 RUNNING QC UNTIL YOU GET IT RIGHT ON A MACHINE, THAT TAKES TIME  
02:09PM 21 AS WELL.

02:09PM 22 Q. A LITTLE WHILE AGO WE LOOKED AT AN EMAIL WHERE YOU WERE  
02:09PM 23 SUGGESTING THAT MULTIPLE READERS MIGHT BE A SOLUTION TO THESE  
02:09PM 24 QC ISSUES.

02:09PM 25 DO YOU REMEMBER THAT?

02:09PM 1 A. I REMEMBER THAT.

02:09PM 2 Q. AND HERE WE SEE AN EXAMPLE OF A SITUATION WHERE IT SAYS

02:09PM 3 THAT "EACH READER HAD TWO CONSECUTIVE FAILURES."

02:09PM 4 WOULD IT MAKE IT HARDER TO SOLVE THAT PROBLEM USING

02:09PM 5 ADDITIONAL READERS?

02:09PM 6 A. YES.

02:09PM 7 Q. DURING YOUR TIME AT THERANOS, WAS THERE EVER A SATISFYING

02:09PM 8 SOLUTION TO THE PROBLEM OF POOR QC PERFORMANCE ON THE EDISONS?

02:09PM 9 A. THERE WAS NEVER A SOLUTION TO POOR PERFORMANCE, NO.

02:09PM 10 Q. AND WERE THOSE PROBLEMS ON YOUR MIND AND PART OF YOUR

02:10PM 11 THINKING WHEN YOU DECIDED TO LEAVE THE COMPANY?

02:10PM 12 A. PARTLY -- IT WAS A PART OF MANY THINGS ON MY MIND, YEAH.

02:10PM 13 Q. LET'S SHIFT GEARS AND TALK ABOUT PROFICIENCY TESTING.

02:10PM 14 WERE YOU ALSO INVOLVED IN PROFICIENCY TESTING AS LAB

02:10PM 15 DIRECTOR AT THERANOS?

02:10PM 16 A. I WAS INVOLVED.

02:10PM 17 Q. AND WHAT WAS YOUR INVOLVEMENT? DESCRIBE THAT?

02:10PM 18 A. WELL, I PAID AN INTEREST IN THE RESULTS OF THEM AND THE

02:10PM 19 PERFORMANCE, AND I SOUGHT TO ENSURE THAT IT WAS BEING DONE

02:10PM 20 PROPERLY FROM A REGULATORY PERSPECTIVE.

02:10PM 21 Q. AND BASED ON WHAT YOU SAW AT THERANOS, DID YOU HAVE

02:10PM 22 CONCERNS ABOUT THE COMPANY'S PROFICIENCY TESTING PRACTICES?

02:10PM 23 A. YES.

02:10PM 24 Q. WHAT WERE THOSE CONCERNS?

02:10PM 25 A. WHEN I ARRIVED THERE AND LEARNED INITIALLY THAT PT HAD --



02:10PM 1 SHOULD WE EXPLAIN PROFICIENCY TESTING OR --

02:10PM 2 Q. LET'S DO THAT. IF YOU COULD GIVE US AN OVERVIEW OF WHAT  
02:10PM 3 THAT IS AND HOW IT'S DONE?

02:10PM 4 A. PROFICIENCY TESTING IS A REGULATORY REQUIREMENT THAT  
02:11PM 5 EXISTS FOR LABORATORIES THAT PERFORM DIAGNOSTIC TESTING.

02:11PM 6 IT'S AN EXAM ESSENTIALLY THAT LAB TESTS HAVE TO TAKE TWO  
02:11PM 7 OR THREE TIMES A YEAR.

02:11PM 8 SO WHAT HAPPENS IS THAT A THIRD PARTY, A NEUTRAL AGENCY  
02:11PM 9 HAS SPECIMENS WHERE THEY KNOW THE ANSWERS TO THOSE SPECIMENS.

02:11PM 10 THEY SEND THEM TO LABS.

02:11PM 11 LABS PERFORM THEIR TESTS ON THOSE SPECIMENS, AND THEN SEND  
02:11PM 12 THE RESULTS BACK TO THE AGENCY, AND THE AGENCY GRADES THAT  
02:11PM 13 TEST.

02:11PM 14 YOU HAVE TO SCORE 80 PERCENT FOR THAT TEST TO BE  
02:11PM 15 CONSIDERED ON LINE. ANYTHING LESS THAN 100 HAS TO BE  
02:11PM 16 INVESTIGATED.

02:11PM 17 THE MOST IMPORTANT THING ABOUT PROFICIENCY TESTING IS THAT  
02:11PM 18 IT'S A NEUTRAL WAY TO ASCERTAIN THE QUALITY OF YOUR TEST, BUT  
02:11PM 19 THAT IT HAS TO BE PERFORMED IN A MANNER THAT IS IDENTICAL TO  
02:11PM 20 THE WAY THAT YOU'RE TREATING PATIENT SPECIMENS, OTHERWISE IN A  
02:12PM 21 SENSE IT'S LIKE GETTING SOMEONE ELSE TO TAKE THE TEST FOR YOU.

02:12PM 22 Q. SO WITH THAT UNDERSTANDING, WHAT WAS IT ABOUT THERANOS'S  
02:12PM 23 PROFICIENCY TESTING PRACTICES THAT CAUSED CONCERNS FOR YOU?

02:12PM 24 A. IT WAS BROUGHT TO MY ATTENTION WHEN I ARRIVED THERE THAT  
02:12PM 25 PROFICIENCY TESTING HAD BEEN DONE ON PREDICATE THIRD PARTY --

02:12PM 1 AS YOU REFERRED TO THIRD PARTY EQUIPMENT.

02:12PM 2 Q. AND WHY WAS THAT A PROBLEM?

02:12PM 3 A. BECAUSE SOME SPECIMENS WERE BEING TESTED USING THE  
02:12PM 4 THERANOS METHODS.

02:12PM 5 Q. AND SO YOU'RE DESCRIBING A MISMATCH BETWEEN HOW PATIENT  
02:12PM 6 TESTING WAS CONDUCTED AND HOW THE PROFICIENCY TESTING WAS DONE?

02:12PM 7 A. CORRECT.

02:12PM 8 Q. AND WHY DOES THAT MATTER?

02:12PM 9 A. WELL, THE REGULATIONS ARE VERY CLEAR AT THE FEDERAL LEVEL  
02:12PM 10 AND MOST STATE LEVELS THAT PROFICIENCY TESTING HAS TO BE DONE  
02:12PM 11 IN A MANNER IDENTICAL TO THE WAY THAT PATIENT TESTS ARE  
02:12PM 12 TREATED.

02:12PM 13 IF PATIENTS AT THERANOS, SPECIMENS ARE BEING TESTED ON TWO  
02:13PM 14 DIFFERENT PIECES OF TECHNOLOGY, THEN YOU HAVE TO PERFORM  
02:13PM 15 PROFICIENCY TESTING ON BOTH METHODS.

02:13PM 16 IF YOU'RE PERFORMING THEM ON ONE AND NOT THE OTHER, YOU'RE  
02:13PM 17 NOT DETERMINING THE QUALITY OR PERFORMANCE IN AN OBJECTIVE  
02:13PM 18 MANNER. YOU'RE NOT DETERMINING THE QUALITY OF THE PERFORMANCE  
02:13PM 19 OF THE TEST FOR WHICH PT IS NOT BEING DONE, AND PT IS SHORT FOR  
02:13PM 20 PROFICIENCY TESTING.

02:13PM 21 Q. I SEE.

02:13PM 22 WAS THERE A TIME IN EARLY 2014 WHEN SOME PROFICIENCY  
02:13PM 23 TESTING SAMPLES WERE RUN ON THE EDISON?

02:13PM 24 A. YES.

02:13PM 25 Q. I'LL ASK YOU TO LOOK AT -- LET'S SEE. DO WE HAVE TAB 1524

02:13PM 1 IN YOUR BINDER?

02:13PM 2 IF NOT, I THINK THIS IS ADMITTED, AND WE CAN DISPLAY IT ON

02:13PM 3 THE SCREEN.

02:13PM 4 A. NO, I DON'T SEE 1524 HERE.

02:13PM 5 MR. BOSTIC: MAY WE PUBLISH THAT, YOUR HONOR?

02:13PM 6 THE COURT: YES.

02:14PM 7 MR. CAZARES: OBJECTION. I DON'T THINK IT'S

02:14PM 8 ADMITTED.

02:14PM 9 THE COURT: LET ME SEE.

02:14PM 10 MR. BOSTIC: I MAY HAVE THE WRONG NUMBER BUT --

02:14PM 11 THE COURT: WAS THIS ADMITTED IN A DIFFERENT FORMAT?

02:14PM 12 MR. BOSTIC: IT SHOULD HAVE BEEN THE SAME FORMAT,

02:14PM 13 YOUR HONOR.

02:14PM 14 IF I COULD HAVE A MOMENT TO --

02:14PM 15 THE COURT: SURE.

02:14PM 16 (DISCUSSION AMONGST GOVERNMENT COUNSEL OFF THE RECORD.)

02:14PM 17 MR. BOSTIC: I THINK I MEAN 1548, YOUR HONOR, WHICH

02:14PM 18 SHOULD HAVE BEEN ADMITTED.

02:14PM 19 THE COURT: THAT'S ADMITTED.

02:14PM 20 MR. BOSTIC: LET'S PUBLISH THAT.

02:14PM 21 Q. DR. PANDORI, DO YOU SEE AN EMAIL IN FRONT OF YOU FROM

02:14PM 22 FEBRUARY 20TH, 2014?

02:14PM 23 A. YES.

02:15PM 24 Q. AND THE SUBJECT LINE THERE IS PROFICIENCY SPREADSHEET;

02:15PM 25 CORRECT?

02:15PM 1 A. IT IS.

02:15PM 2 Q. ALL RIGHT. LET'S LOOK AT THE NATIVE ATTACHMENT TO THIS.

02:15PM 3 AND WHILE WE'RE OPENING THAT UP, DO YOU RECALL HOW THIS  
02:15PM 4 TESTING CAME TO BE, WHY IT TOOK PLACE?

02:15PM 5 A. WHEN I WAS MADE AWARE OF THE FACT THAT THE PT WAS RUN ON  
02:15PM 6 PREDICATE METHODS, THIRD PARTY DEVICE CLEARED METHODS, AND NOT  
02:15PM 7 THERANOS METHODS, I SAID YOU'VE GOT TO RUN THEM ON THE THERANOS  
02:15PM 8 METHODS.

02:15PM 9 AND THEN SOMEBODY IMPLIED, WELL, MAYBE WE SHOULDN'T DO  
02:15PM 10 THAT.

02:15PM 11 AND I SAID, WELL, NO, WE NEED TO DO THEM ON BOTH. SO  
02:15PM 12 LET'S RUN THOSE PT'S THAT CAME IN, LET'S RUN THEM ON BOTH  
02:15PM 13 METHODS.

02:15PM 14 Q. SO PERFORMING THIS TESTING WAS YOUR IDEA?

02:15PM 15 A. THAT'S MY RECOLLECTION, YEAH.

02:15PM 16 Q. AND WERE YOU THEN IN A POSITION TO DIRECT THAT THE TESTING  
02:15PM 17 TAKE PLACE OR DID YOU HAVE TO CONVINCE SOMEONE ELSE TO  
02:16PM 18 AUTHORIZE IT?

02:16PM 19 A. I TALKED TO DR. ROSENDORFF ABOUT DOING IT, WHO WAS THE  
02:16PM 20 LABORATORY DIRECTOR, AND HE AGREED.

02:16PM 21 Q. AND AGAIN, WHAT WAS YOUR GOAL IN DIRECTING THAT THIS  
02:16PM 22 TESTING TAKE PLACE?

02:16PM 23 A. I THOUGHT TWO THINGS WOULD HAPPEN.

02:16PM 24 ONE IS THAT WE WOULD MEET OUR REGULATORY REQUIREMENT AND  
02:16PM 25 NOT TREAT THE PT SPECIMENS ANY DIFFERENTLY THAN PATIENT

02:16PM 1 SPECIMENS;

02:16PM 2 AND, SECONDLY, I THOUGHT WE COULD SEE HOW WELL THE  
02:16PM 3 PREDICATE METHODS -- AT LEAST I COULD GET FIRSTHAND DATA ON HOW  
02:16PM 4 WELL THE PREDICATE METHODS MATCHED THE THERANOS METHODS.

02:16PM 5 Q. OKAY. AND WHY WAS THAT IMPORTANT TO SEE, THE MATCH OR  
02:16PM 6 MISMATCH BETWEEN THERANOS METHODS AND THE PREDICATE METHODS YOU  
02:16PM 7 CALLED THEM?

02:16PM 8 A. WE CALLED THEM -- PREDICATE WAS A TERM THAT WE WOULD USE  
02:16PM 9 AT LEAST IN THIS CONTEXT IT WOULD BE AN FDA CLEARED LAB TEST  
02:17PM 10 THAT YOU COULD BUY FROM A COMPANY THAT HAS UNDERGONE CLINICAL  
02:17PM 11 TRIALS AND IS ROUTINELY IN USE IN SEVERAL DIAGNOSTIC  
02:17PM 12 LABORATORIES.

02:17PM 13 Q. OKAY. AND SO WHY WERE YOU INTERESTED IN SEEING THAT  
02:17PM 14 CORRELATION?

02:17PM 15 A. WELL, A PREDICATE METHOD IS -- WOULD HAVE BEEN AN  
02:17PM 16 EXTRAORDINARILY VETTED METHODOLOGY OF LAB TESTING.

02:17PM 17 THAT IS TO SAY A PREDICATE METHOD WILL HAVE UNDERGONE  
02:17PM 18 CLINICAL TRIAL, WHICH ACCORDING TO THE UNITED STATES  
02:17PM 19 REGULATIONS IS A MASSIVE AMOUNT OF OBSERVATION AND ASSESSMENT.

02:17PM 20 SO ONE MIGHT FEEL VERY CONFIDENT THAT A PREDICATE METHOD  
02:17PM 21 WILL GIVE AN ACCURATE RESULT ON A PATIENT, AND SO I WANTED TO  
02:17PM 22 SEE FOR MYSELF WHAT WOULD HAPPEN IF WE COMPARED IT TO A  
02:17PM 23 THERANOS METHOD.

02:17PM 24 Q. OKAY. LOOKING AT THE DATA THAT RESULTED FOR THE FOUR  
02:17PM 25 ASSAYS THAT WERE TESTED -- I GUESS LET ME JUST ASK, DID YOUR

02:18PM 1 WISH COME TRUE? DID YOU SEE DATA WHERE THERANOS MATCHED THE  
02:18PM 2 PREDICATE TESTING CLOSELY?

02:18PM 3 A. THERE'S QUITE A LOT OF DIFFERENCE IN THESE RESULTS. YOU  
02:18PM 4 WOULD NEED TO BE, YOU KNOW, AN EXPERT TO APPRECIATE THE  
02:18PM 5 DIFFERENCES BECAUSE THOSE DIFFERENCES DON'T LOOK LARGE BUT  
02:18PM 6 THERE'S LARGE DIFFERENCES THERE.

02:18PM 7 WITH REGARD TO VITAMIN D, THERE'S PARTICULARLY LARGE  
02:18PM 8 DIFFERENCES FOR THAT.

02:18PM 9 Q. AND --

02:18PM 10 A. BUT FOR THESE OTHER TESTS, THERE ARE DIFFERENCES OF NOTE.

02:18PM 11 Q. I APOLOGIZE FOR TALKING OVER YOU.

02:18PM 12 FOR VITAMIN D YOU'RE REFERRING TO THE TOP FEW ROWS OF THE  
02:18PM 13 CHART?

02:18PM 14 A. I'M REFERRING TO ROWS 2, 3, 4, AND COLUMNS A THROUGH G.

02:18PM 15 Q. OKAY. AND ARE YOU REFERENCING THE DIFFERENCES BETWEEN THE  
02:18PM 16 THERANOS RESULTS AS COMPARED TO THE PREDICATE FDA APPROVED  
02:19PM 17 RESULTS?

02:19PM 18 A. I AM.

02:19PM 19 Q. OKAY. GENERALLY SPEAKING, WERE YOU HAPPY WITH THESE  
02:19PM 20 RESULTS WHEN THEY CAME IN IN FEBRUARY OF 2014?

02:19PM 21 A. NO, I WAS NOT HAPPY WITH THESE RESULTS.

02:19PM 22 Q. DID THEY CAUSE YOU TO HAVE CONCERNS ABOUT THE ACCURACY OF  
02:19PM 23 THERANOS'S TESTING?

02:19PM 24 A. YEAH, I HAD -- THESE CAUSED ME TO HAVE CONCERNS ABOUT THE  
02:19PM 25 ACCURACY.

02:19PM 1 YOU KNOW, FOR VITAMIN D, THIS IS A TEST THAT GENERALLY IS  
02:19PM 2 A COEFFICIENT OF VARIATION FOR -- IF YOU LOOK AT PREDICATE  
02:19PM 3 METHODS OUT THERE, IT WOULD BE A TEST THAT WOULD HAVE A  
02:19PM 4 COEFFICIENT OF VARIATION OF PROBABLY 10 PERCENT, AND THIS IS  
02:19PM 5 WAY BEYOND THAT.

02:19PM 6 Q. LOOKING AT SOME OF THE TPSA RESULTS, DO YOU SEE THAT THERE  
02:19PM 7 WERE TWO SAMPLES THAT WERE RUN TWICE?

02:19PM 8 A. YEP.

02:19PM 9 Q. AND THESE RERUNS ARE MARKED IN RED; IS THAT RIGHT?

02:19PM 10 A. YES.

02:19PM 11 Q. WHAT, IF ANYTHING, DO YOU DRAW FROM THE PERFORMANCE OF THE  
02:20PM 12 PREDICATE METHOD VERSUS THE THERANOS METHOD IN THOSE CASES  
02:20PM 13 WHERE THE SAMPLES ARE RUN TWICE?

02:20PM 14 A. THIS IMPLIES POOR PRECISION, WHICH IS A LABORATORY,  
02:20PM 15 QUALITY LABORATORY TERM WHICH APPLIES TO REPEATABILITY.

02:20PM 16 IF YOU THINK OF A DARTBOARD, ACCURACY WOULD BE HOW OFTEN I  
02:20PM 17 HIT THE BULL'S EYE.

02:20PM 18 PRECISION WOULD BE HOW OFTEN CAN I -- HOW WELL DO I  
02:20PM 19 CLUSTER MY DARTS.

02:20PM 20 SO AN ACCURATE AND PRECISE TEST WOULD BE ALL OF MY DARTS  
02:20PM 21 IN THE BULL'S EYE.

02:20PM 22 A PRECISE TEST BUT AN INACCURATE TEST WOULD BE THAT ALL OF  
02:20PM 23 MY DARTS ARE CLUSTERED ON THE DARTBOARD, BUT THEY'RE NOT ON THE  
02:20PM 24 BULL'S EYE.

02:20PM 25 SO YOU CAN HAVE PRECISION WITHOUT ACCURACY.

02:20PM 1 WHAT I'M SEEING HERE IS THAT THE PREDICATE METHOD WAS  
02:20PM 2 PRECISE. IT GAVE THE EXACT SAME RESULT ON BOTH OCCASIONS  
02:20PM 3 WHEREAS THE THERANOS METHOD GAVE DRASTICALLY, CONSIDERABLY  
02:20PM 4 DIFFERENT RESULTS ON BOTH OCCASIONS.

02:21PM 5 Q. AND DOES SOMETHING LIKE THAT CAUSE CONCERNS ABOUT THE  
02:21PM 6 ACCURACY OF PATIENT TESTING?

02:21PM 7 A. IN THIS CASE BOTH ACCURACY AND PRECISION ARE CALLED INTO  
02:21PM 8 QUESTION.

02:21PM 9 Q. WHEN THIS TESTING WAS CONDUCTED, WERE YOU FAMILIAR WITH A  
02:21PM 10 TERM CALLED AAP, OR ALTERNATIVE ASSESSMENT PROFICIENCY?

02:21PM 11 A. YES.

02:21PM 12 Q. AND WERE YOU GENERALLY FAMILIAR WITH WHAT THE REGULATIONS  
02:21PM 13 SAY ABOUT PROFICIENCY TESTING AND AAP?

02:21PM 14 A. YES.

02:21PM 15 Q. AND HOW ABOUT THE INTERNAL THERANOS SOP'S ON PROFICIENCY  
02:21PM 16 TESTING, WERE YOU GENERALLY FAMILIAR WITH THOSE?

02:21PM 17 A. NO.

02:21PM 18 Q. OKAY. AS LABORATORY DIRECTOR AT THERANOS, WAS THERE A  
02:21PM 19 REASON WHY FAMILIARITY WITH INTERNAL SOP'S WASN'T NECESSARY TO  
02:22PM 20 YOUR SOP OR WHY IT HADN'T COME UP?

02:22PM 21 A. THE SOP FOR PERFORMING PROFICIENCY TESTING, YOUR QUESTION  
02:22PM 22 IS WHY -- I'M JUST NOT SURE I UNDERSTAND.

02:22PM 23 Q. SURE.

02:22PM 24 WAS THE CONTENT OF THAT SOP RELEVANT TO THE WORK THAT YOU  
02:22PM 25 WERE DOING AT THE COMPANY?



02:22PM 1 A. IT WOULD HAVE BEEN, YEAH.

02:22PM 2 Q. WERE YOU INVOLVED IN DECIDING HOW THE COMPANY CONDUCTED  
02:22PM 3 PROFICIENCY TESTING DURING THAT TIME?

02:22PM 4 A. I DIDN'T ENTER THE COMPANY WITH THE IDEA IN MIND THAT I  
02:22PM 5 WOULD HAVE TO, BUT AFTER THIS BECAME CLEAR THAT I MIGHT BE ABLE  
02:22PM 6 TO CONTRIBUTE IN THAT REGARD.

02:22PM 7 Q. OKAY. PRIOR TO THIS TIME, THOUGH, WAS IT PART OF YOUR JOB  
02:23PM 8 TO MAKE THAT DETERMINATION AS TO HOW PROFICIENCY TESTING WOULD  
02:23PM 9 HAPPEN?

02:23PM 10 A. I WAS BROUGHT INTO THE PROCESS OF TRYING TO FIND OUT IF WE  
02:23PM 11 COULD DEVELOP A BETTER SOP.

02:23PM 12 Q. OKAY. UNDERSTOOD.

02:23PM 13 ARE YOU OR WERE YOU AWARE AT THE TIME IN 2014 THAT THE  
02:23PM 14 FORMAT OF THIS EXPERIMENT DIDN'T EXACTLY MATCH WHAT THE  
02:23PM 15 REGULATIONS CALLED FOR WHEN IT COMES TO ALTERNATIVE ASSESSMENT  
02:23PM 16 PROFICIENCY?

02:23PM 17 A. I'M SORRY, COULD YOU ASK THAT QUESTION AGAIN.

02:23PM 18 Q. SURE.

02:23PM 19 YOU SAID YOU WERE FAMILIAR WITH AAP, OR ALTERNATIVE  
02:23PM 20 ASSESSMENT PROFICIENCY?

02:23PM 21 A. YES.

02:23PM 22 Q. WAS THIS SOMETHING THAT HAPPENED IN FEBRUARY OF 2014, AAP?

02:23PM 23 A. NO.

02:23PM 24 Q. GIVEN THAT THIS WAS NOT AAP, DID YOU STILL FIND THE  
02:24PM 25 RESULTS OF THIS EXPERIMENT INFORMATIVE TO YOU AS LAB DIRECTOR?

02:24PM 1 A. YEAH, THESE RESULTS WERE REALLY INFORMATIVE TO ME.

02:24PM 2 Q. AND WHY IS THAT, IF THIS ISN'T FORMAL AAP, WHY DID YOU

02:24PM 3 FEEL THAT YOU COULD STILL RELY ON IT?

02:24PM 4 A. WELL, I THINK WHAT HAPPENED HERE WAS THAT, FIRST OF ALL,

02:24PM 5 AS I STATED EARLIER, THIS RAISED QUESTIONS INITIALLY FOR ME

02:24PM 6 ABOUT THE ACCURACY OF THE THERANOS TEST AND ITS PRECISION.

02:24PM 7 THE WHOLE QUESTION OF AAP COMES UP BECAUSE I BELIEVE, AND

02:24PM 8 I WOULD HAVE TO REFER TO EMAILS TO REFRESH MY MEMORY, SOMEBODY

02:24PM 9 INDICATED THAT THIS WAS AN INAPPROPRIATE WAY TO --

02:24PM 10 MR. CAZARES: OBJECTION. HEARSAY.

02:24PM 11 THE COURT: I'LL SUSTAIN IT AS TO THAT.

02:24PM 12 BY MR. BOSTIC:

02:24PM 13 Q. LET'S MOVE TO THE EMAIL THAT I THINK YOU'RE REFERENCING,

02:24PM 14 DR. PANDORI.

02:24PM 15 I'LL ASK YOU TO LOOK AT TAB 1570.

02:25PM 16 A. OKAY.

02:25PM 17 Q. FIRST, LET ME ASK GENERALLY, DO YOU HAVE A MEMORY OF WHAT

02:25PM 18 MR. BALWANI'S REACTION WAS TO THIS TESTING BEING DONE?

02:25PM 19 A. YEAH, I REMEMBER THAT. HE WAS REALLY UPSET THAT WE HAD

02:25PM 20 DONE THIS.

02:25PM 21 Q. OKAY. LOOKING AT TAB 1570, IS THAT AN EMAIL CHAIN

02:25PM 22 INCLUDING YOU AND MR. BALWANI DISCUSSING PROFICIENCY TESTING

02:25PM 23 FOR LDT'S?

02:25PM 24 A. YOU'RE REFERRING TO 1570.

02:25PM 25 Q. 1570?

02:25PM 1 A. THERE'S A LOT HERE.

02:25PM 2 Q. TAKE A MOMENT AND GO THROUGH IT IF YOU WOULD LIKE.

02:25PM 3 (PAUSE IN PROCEEDINGS.)

02:26PM 4 BY MR. BOSTIC:

02:26PM 5 Q. AND WE'RE ABOUT TO WALK THROUGH IT IN MORE DETAIL, BUT FOR

02:26PM 6 NOW MY QUESTION IS JUST IS THIS AN EMAIL CHAIN INTERNAL AT

02:26PM 7 THERANOS RELATING TO THIS TOPIC?

02:26PM 8 A. YEAH, IT IS.

02:26PM 9 MR. BOSTIC: YOUR HONOR, THE GOVERNMENT OFFERS 1570.

02:26PM 10 MR. CAZARES: NO OBJECTION.

02:26PM 11 THE COURT: IT'S ADMITTED. IT MAY BE PUBLISHED.

02:26PM 12 (GOVERNMENT'S EXHIBIT 1570 WAS RECEIVED IN EVIDENCE.)

02:26PM 13 BY MR. BOSTIC:

02:26PM 14 Q. LET'S START ON PAGE 8 OF THIS EMAIL CHAIN IF WE COULD.

02:26PM 15 WE START WITH AN EMAIL FROM DANIEL YOUNG TO DR. ROSENDORFF

02:26PM 16 AS WELL AS MS. HOLMES AND MR. BALWANI.

02:26PM 17 DO YOU SEE THAT?

02:26PM 18 A. YES.

02:26PM 19 Q. AND AT THE TOP IT SAYS, "HERE ARE MY SUGGESTIONS THAT I

02:26PM 20 DISCUSSED WITH ADAM. I'M PROVIDING SOME EXTRA BACKGROUND

02:27PM 21 INFO," AND THEN HE GOES ON TO DISCUSS THE PROFICIENCY TESTING

02:27PM 22 REQUIREMENTS FOR LABORATORY DEVELOPED TESTS.

02:27PM 23 DO YOU SEE THAT?

02:27PM 24 A. YES.

02:27PM 25 Q. LET'S GO TO PAGE 6 NOW MOVING FORWARD IN TIME THROUGH THE

02:27PM 1 EMAIL.

02:27PM 2 AND LET'S LOOK AT THE BOTTOM OF PAGE 6, AND WE SEE AN

02:27PM 3 EMAIL FROM YOU TO LANGLEY GEE; IS THAT RIGHT?

02:27PM 4 A. YEAH.

02:27PM 5 Q. AND --

02:27PM 6 A. YES.

02:27PM 7 Q. AND ON FEBRUARY 24TH YOU WRITE TO MR. GEE, "PLEASE SHARE

02:27PM 8 WITH DANIEL YOUNG THE COMPARISON OF PREDICATE AND EDISON FOR

02:27PM 9 THE PT SPECIMENS WE TESTED."

02:27PM 10 DO YOU SEE THAT?

02:27PM 11 A. I DO.

02:27PM 12 Q. IS THAT REFERRING TO THE COMPARISON DATA THAT WE JUST

02:27PM 13 LOOKED AT IN THE EXCEL SPREADSHEET?

02:27PM 14 A. YES.

02:27PM 15 Q. WHY DID YOU THINK IT WAS IMPORTANT FOR MR. GEE TO FORWARD

02:27PM 16 THIS TO DANIEL YOUNG?

02:27PM 17 A. AT THAT TIME IN FEBRUARY, IT WAS STILL PRETTY EARLY IN MY

02:28PM 18 TIME AT THE COMPANY, I -- DANIEL -- I FELT THAT DANIEL YOUNG

02:28PM 19 PLAYED A ROLE IN THINKING ABOUT PROBLEMS AT THE COMPANY, AND I

02:28PM 20 THINK AS WELL THAT HE HAD DISCUSSED PT AT ONE POINT WITH

02:28PM 21 DR. ROSENDORFF, I HAD HEARD.

02:28PM 22 SO I THOUGHT HE WAS IN A POSITION AT THE COMPANY THAT

02:28PM 23 WHEREBY SOME DATA LIKE THIS, HE COULD ACTIVATE THE PROCESS THAT

02:28PM 24 WOULD START TO DO SOMETHING ABOUT THIS PROBLEM.

02:28PM 25 Q. OKAY. LOOKING AT PAGE 5 OF THIS EXHIBIT WE SEE IN THE

02:28PM 1 MIDDLE OF THE PAGE THAT LONGLY GEE FORWARDS, IT LOOKS LIKE,  
02:28PM 2 THAT DATA TO MR. BALWANI.

02:28PM 3 DO YOU SEE THAT?

02:28PM 4 A. YES.

02:28PM 5 Q. AND THEN ABOVE THAT AT THE TOP OF THE PAGE, IF WE ZOOM IN,  
02:29PM 6 WE SEE AN EMAIL FROM MR. BALWANI TO YOU AND OTHERS AT THE  
02:29PM 7 COMPANY ASKING WHERE AND WHO PULLED THE RESULTS FOR EDISONS  
02:29PM 8 RUNS.

02:29PM 9 AND THEN HE SAYS, "I WOULD LIKE TO SEE THE RAW DATA FOR  
02:29PM 10 THESE AND MAKE SURE THE CALIBRATIONS, ET CETERA, WERE PROPERLY  
02:29PM 11 APPLIED."

02:29PM 12 DO YOU SEE THAT?

02:29PM 13 A. I SEE THAT.

02:29PM 14 Q. WHAT WAS YOUR REACTION AT THE TIME TO MR. BALWANI ASKING  
02:29PM 15 TO SEE THE RAW DATA TO CONFIRM THAT CALIBRATIONS HAD BEEN  
02:29PM 16 APPLIED FOR THIS TESTING EXPERIMENT?

02:29PM 17 A. I REMEMBER FEELING THAT AT THAT TIME IN MY EMPLOYMENT THAT  
02:29PM 18 I WAS A BIT SURPRISED THAT HE WOULD PLAY A ROLE, THAT  
02:29PM 19 PARTICULAR ROLE IN THE PROCESS OF TROUBLESHOOTING IT.

02:29PM 20 Q. WHY IS THAT?

02:29PM 21 A. WELL, HE'S THE COO OF THE COMPANY AS I RECALL, AND THAT'S  
02:29PM 22 PRETTY HIGH LEVEL MANAGEMENT, AND ALSO IT CAME TO MY  
02:30PM 23 UNDERSTANDING THAT HIS BACKGROUND WAS MORE IN SOFTWARE.

02:30PM 24 Q. WAS THIS KIND OF WORK, REVIEWING RAW DATA TO CHECK ON  
02:30PM 25 CALIBRATIONS, THE KIND OF WORK THAT WOULD BENEFIT FROM HAVING

02:30PM 1 FORMAL SCIENTIFIC EDUCATION?

02:30PM 2 A. CAN YOU RESTATE.

02:30PM 3 Q. SURE.

02:30PM 4 THE KIND OF WORK THAT HE'S OFFERING TO DO HERE OR  
02:30PM 5 DEMANDING TO DO, REVIEWING THE RAW DATA TO MAKE SURE THE  
02:30PM 6 CALIBRATIONS WERE APPLIED, IS THAT THE KIND OF WORK THAT WOULD  
02:30PM 7 TYPICALLY BE DONE BY SOMEONE WITH SOME TRAINING IN THE  
02:30PM 8 BIOSCIENCES?

02:30PM 9 A. I WOULD THINK THAT IT WOULD BE DONE BY SOMEBODY WHO HAS  
02:30PM 10 EXPERIENCE IN DIAGNOSTIC LAB TESTING, MAYBE ANY KIND OF --  
02:30PM 11 MAYBE TO SOME DEGREE BIOSTATISTICS BUT EXPERIENCE IN LAB  
02:30PM 12 TESTING IS HOW I WOULD HAVE THOUGHT THAT.

02:30PM 13 AND THEN I REMEMBER THINKING READING THIS, OH, MAYBE HE'LL  
02:30PM 14 HAVE SOMEONE ELSE TAKE A LOOK AT IT.

02:31PM 15 Q. OKAY. LET'S MOVE UP THROUGH THIS CHAIN AND LOOK AT  
02:31PM 16 ANOTHER REACTION BY MR. BALWANI ON PAGE 3.

02:31PM 17 AND ON PAGE 3, LET'S ZOOM IN ON THE MIDDLE OF THE PAGE.  
02:31PM 18 MR. BALWANI SAYS, "OUR VALIDATION AGAINST IMMULITE HAS BEEN  
02:31PM 19 EXCELLENT IN THE PAST. IT IS THESE PT SAMPLES THAT ARE OFF."

02:31PM 20 DO YOU SEE THAT?

02:31PM 21 A. I SEE THAT.

02:31PM 22 Q. WHAT IS YOUR UNDERSTANDING OF WHAT HE'S SAYING IN THIS  
02:31PM 23 EMAIL?

02:31PM 24 A. WHAT SUNNY IS SAYING IN THIS EMAIL IS THAT A VALIDATION IS  
02:31PM 25 A STUDY WHERE YOU'RE TAKING TWO METHODS AND COMPARING THEM TO

02:31PM 1 ONE ANOTHER, AND YOU WANT THE -- TO DETERMINE HOW ACCURATE THE  
02:31PM 2 NEW METHOD IS, SO TO SPEAK, TO THE OLD METHOD.

02:31PM 3 WHAT THIS SAYS IS THAT THE THERANOS METHOD HAD BEEN  
02:31PM 4 THROUGH A VALIDATION STUDY, AND IN THAT PROCESS, IT WAS  
02:31PM 5 COMPARED TO AN IMMULITE.

02:31PM 6 AN IMMULITE IS AN FDA CLEARED THIRD PARTY TEST.

02:32PM 7 AND IN THAT VALIDATION IT HAD SHOWN THAT THE THERANOS  
02:32PM 8 METHODS PERFORMED WELL WHEN COMPARED TO THE FDA CLEARED METHOD.

02:32PM 9 SO HE CONCLUDES, OR HE INDICATES I SHOULD SAY, THAT IT  
02:32PM 10 MUST BE THAT THERE WAS A PROBLEM WITH THE PT SAMPLES AND NOT  
02:32PM 11 THE THERANOS TECHNOLOGY.

02:32PM 12 Q. AND DID YOU AGREE WITH HIM THAT THE DATA SUPPORTED THAT  
02:32PM 13 CONCLUSION THAT THE PT SAMPLES THEMSELVES WERE OFF?

02:32PM 14 A. I DIDN'T AGREE OR DISAGREE AT THAT MOMENT IN TIME.

02:32PM 15 Q. AROUND THIS TIME IN FEBRUARY OF 2014, HAD YOU SEEN ANY  
02:32PM 16 ISSUES WITH THE EDISON ANALYZER THAT COULDN'T BE EXPLAINED BY  
02:32PM 17 PT SAMPLES BEING OFF?

02:32PM 18 A. WELL, PATIENT SPECIMENS WOULD GIVE DIFFERENT VALUES WHEN  
02:32PM 19 THEY WERE RUN OVER AND OVER AGAIN, OR REPEATEDLY I SHOULD SAY,  
02:32PM 20 WHICH WOULD IMPLY THAT PT SAMPLES MIGHT NOT BE THE PROBLEM.

02:33PM 21 Q. I SEE.

02:33PM 22 LET'S LOOK AT PAGE 1 OF THIS EMAIL, AND I'D LIKE TO LOOK  
02:33PM 23 AT TWO EMAILS, ONE FROM DR. ROSENDORFF AND ONE FROM YOU.

02:33PM 24 AND STARTING WITH DR. ROSENDORFF'S IN THE MIDDLE OF THE  
02:33PM 25 PAGE.

02:33PM 1 HE SAYS, "READING THROUGH THE REGULATIONS MORE FINELY --  
02:33PM 2 IF WE DID ENROLL IN PT FOR THERANOS METHODS, WE WOULD NEED TO  
02:33PM 3 DO AN ALTERNATE ASSESSMENT PROTOCOL (AAP) IN ANY EVENT."

02:33PM 4 DO YOU SEE THAT?

02:33PM 5 A. YES.

02:33PM 6 Q. AND IS THIS WHAT WE WERE DISCUSSING AAP VERSUS STANDARD  
02:33PM 7 PROFICIENCY TESTING?

02:33PM 8 A. YES.

02:33PM 9 Q. DR. ROSENDORFF THEN ASKS AT THE BOTTOM OF HIS EMAIL, "MY  
02:33PM 10 QUESTION IS WHAT PT DO WE REPORT TO COMMERCIAL PT PROVIDERS AND  
02:33PM 11 HENCE TO CMS?"

02:33PM 12 DO YOU SEE THAT?

02:33PM 13 A. YES, I SEE IT.

02:33PM 14 Q. WAS THAT YOUR CONCERN, TOO, AT THE TIME, WHAT DATA WAS  
02:33PM 15 BEING REPORTED TO REGULATORS?

02:33PM 16 A. IT WAS MY PRIMARY.

02:34PM 17 Q. LET'S LOOK AT YOUR EMAIL AT THE TOP OF PAGE 1.

02:34PM 18 YOU WRITE BACK TO DR. ROSENDORFF, INCLUDING MR. BALWANI  
02:34PM 19 AND MS. HOLMES.

02:34PM 20 YOU SAY, "ADAM,

02:34PM 21 "SEEMS THAT THE THING TO DO WOULD BE TO REPORT THE  
02:34PM 22 THERANOS METHODS, AS THEY ARE OUR PRIMARY METHODS.

02:34PM 23 "THIS WOULD KEEP US IN FULL COMPLIANCE OF THE REGS, AND  
02:34PM 24 THE LACK OF A PEER GROUP WOULD TRIGGER AN UNGRADED SCORE WHICH  
02:34PM 25 WOULD ALLOW US TO EVALUATE OUR PERFORMANCE."



02:34PM 1 WHY WERE YOU ADVOCATING TO REPORT THE THERANOS METHODS,  
02:34PM 2 THE PRIMARY METHODS, TO THE REGULATORS?  
02:34PM 3 A. THEY WERE BEING USED TO RUN A LARGE NUMBER OF THERANOS  
02:34PM 4 SPECIMENS.  
02:34PM 5 Q. OKAY. LET'S LOOK AT TAB 1580, PLEASE, IN YOUR BINDER.  
02:35PM 6 AND DO YOU SEE THAT 1580 IS A CONTINUATION OF THAT SAME  
02:35PM 7 EMAIL CHAIN?  
02:35PM 8 A. I DON'T -- OH, SORRY.  
02:35PM 9 Q. IN YOUR BINDER.  
02:35PM 10 A. WHAT?  
02:35PM 11 Q. IT'S JUST THE NEXT TAB IN YOUR BINDER, 1580?  
02:35PM 12 A. I WAS LOOKING AT THE SCREEN.  
02:35PM 13 Q. NO PROBLEM?  
02:35PM 14 A. YEAH, I'M THERE.  
02:35PM 15 Q. OKAY. DO YOU SEE THAT THIS IS A CONTINUATION OF THE SAME  
02:35PM 16 EMAIL CHAIN THAT WE WERE JUST LOOKING AT?  
02:35PM 17 A. YES.  
02:35PM 18 Q. AND DO YOU SEE THAT IT CONTINUES TO INCLUDE MR. BALWANI  
02:35PM 19 AND MS. HOLMES?  
02:35PM 20 A. YES.  
02:35PM 21 MR. BOSTIC: YOUR HONOR, THE GOVERNMENT OFFERS 1580.  
02:35PM 22 MR. CAZARES: NO OBJECTION.  
02:35PM 23 THE COURT: IT'S ADMITTED. IT MAY BE PUBLISHED.  
02:35PM 24 (GOVERNMENT'S EXHIBIT 1580 WAS RECEIVED IN EVIDENCE.)  
02:35PM 25 BY MR. BOSTIC:

02:35PM 1 Q. LET'S START AT THE BOTTOM HALF OF THE PAGE.

02:35PM 2 FIRST, DO YOU SEE, DR. PANDORI, THE EMAIL FROM

02:35PM 3 ADAM ROSENDORFF REGARDING AAP?

02:36PM 4 A. YES.

02:36PM 5 Q. OKAY. AND THEN MS. HOLMES'S RESPONSE TO THAT; CORRECT?

02:36PM 6 A. YES.

02:36PM 7 Q. AND THEN SHE WRITES, "WE ENGAGED TOP COUNSEL ON THIS SOME

02:36PM 8 TIME AGO. SUNNY WILL DEBRIEF YOU TOMORROW -- IT IS CRITICAL

02:36PM 9 THAT NO ONE IS GUESSING ON MATTERS LIKE THESE."

02:36PM 10 DO YOU SEE THAT?

02:36PM 11 A. YES.

02:36PM 12 Q. AND IN EXPRESSING THE VIEWS THAT YOU AND DR. ROSENDORFF

02:36PM 13 WERE EXPRESSING, WERE YOU GUESSING ABOUT THE REQUIREMENTS?

02:36PM 14 A. NO.

02:36PM 15 Q. WAS IT PART OF YOUR JOB TO UNDERSTAND HOW TO PROPERLY

02:36PM 16 CONDUCT PROFICIENCY TESTING AT A LAB LIKE THIS?

02:36PM 17 A. IT'S PART OF MY JOB AS A LABORATORY DIRECTOR AND IT'S PART

02:36PM 18 OF DR. ROSENDORFF'S JOB AS A LABORATORY DIRECTOR, AND IT'S A

02:36PM 19 NATURAL AND NORMAL THING DONE IN ALL DIAGNOSTIC LABORATORIES.

02:36PM 20 Q. LET'S GO UP TO MR. BALWANI'S RESPONSE AT THE TOP OF

02:36PM 21 PAGE 1.

02:37PM 22 AND LET'S DIVIDE THIS UP SO WE CAN ZOOM IN A LITTLE BIT

02:37PM 23 MORE ACTUALLY. LET'S TAKE THE FIRST HALF FIRST. THANK YOU.

02:37PM 24 YOU SEE THAT MR. BALWANI WRITES IN THAT TOP LINE, "I AM

02:37PM 25 EXTREMELY IRRITATED AND FRUSTRATED BY FOLKS WITH NO LEGAL

02:37PM 1 BACKGROUND TAKING LEGAL POSITIONS AND INTERPRETATIONS ON THESE  
02:37PM 2 MATTERS AND JUNIOR CLIA AND NON-CLIA PERSONNEL CHALLENGING OUR  
02:37PM 3 CLIA SOP'S."

02:37PM 4 DO YOU SEE THAT?

02:37PM 5 A. YES.

02:37PM 6 Q. IN YOUR VIEW AS LABORATORY DIRECTOR AT THIS TIME, WAS  
02:37PM 7 COMPLIANCE WITH PROFICIENCY TESTING JUST A LEGAL REQUIREMENT?

02:37PM 8 A. COMPLIANCE WITH PT TESTING SERVES A REGULATORY  
02:37PM 9 REQUIREMENT, BUT IT REALLY IS -- YOU CAN LOOK AT IT THAT WAY,  
02:37PM 10 BUT PERFORMING PT PROPERLY IS ESSENTIAL FOR AN OBJECTIVE MANNER  
02:38PM 11 IN ASSESSING THE QUALITY AND ACCURACY OF YOUR LAB TESTS, AND  
02:38PM 12 THAT SERVES A PATIENT SAFETY FUNCTION, WHICH IS IN MY MIND MORE  
02:38PM 13 IMPORTANT THAN THE REGULATIONS, BUT PROBABLY WHY REGULATIONS  
02:38PM 14 EXIST OF COURSE.

02:38PM 15 Q. AND IS THAT ASPECT OF IT, THE PATIENT SAFETY ASPECT,  
02:38PM 16 SOMETHING THAT YOU WERE CONCERNED WITH AS LABORATORY DIRECTOR?

02:38PM 17 A. YES.

02:38PM 18 Q. IN THE SECOND PARAGRAPH OF MR. BALWANI'S EMAIL HE SAYS,  
02:38PM 19 "THESE PAST FEW DAYS, WE HAVE WASTED SO MUCH TIME TALKING TO  
02:38PM 20 PEOPLE OUTSIDE OF CLIA WHO HAVE COME TO US TO SHARE THAT OUR PT  
02:38PM 21 ON VITAMIN D ON EDISON HAS FAILED. THESE PT SAMPLES SHOULD  
02:38PM 22 HAVE NEVER RUN ON EDISONS TO BEGIN WITH."

02:38PM 23 DO YOU SEE THAT?

02:38PM 24 A. YES.

02:38PM 25 Q. YOU TESTIFIED EARLIER THAT IT HAD BEEN YOUR DECISION TO

02:38PM 1 RUN THESE SAMPLES ON THE EDISONS?

02:38PM 2 A. YES.

02:38PM 3 Q. DID YOU AGREE WITH MR. BALWANI THAT THAT WAS A MISTAKE?

02:38PM 4 A. I DID NOT AGREE WITH MR. BALWANI THAT THAT WAS A MISTAKE.

02:38PM 5 Q. AND WHY DID YOU DISAGREE?

02:39PM 6 A. BECAUSE IT IS ESSENTIAL BY WAY OF REGULATIONS THAT PT'S

02:39PM 7 ARE TREATED THE SAME WAY THAT PATIENT SPECIMENS ARE TREATED,

02:39PM 8 OTHERWISE YOU'RE NOT TRULY DETERMINING THE QUALITY OF YOUR

02:39PM 9 PROCESS AND YOU'RE NOT HAVING AN OBJECTIVE AND PROPER

02:39PM 10 ASSESSMENT OF THE TEST.

02:39PM 11 Q. LET'S ZOOM OUT AND GO IN ON THE BOTTOM TWO PARAGRAPHS OF

02:39PM 12 MR. BALWANI'S RESPONSE.

02:39PM 13 AND IN THAT BOTTOM PARAGRAPH YOU SEE THAT HE SAYS IN THE

02:39PM 14 MIDDLE, "NO PERSONAL OPINIONS. RIGHT NOW, EVERY CLS OR TS OR

02:39PM 15 GS CONSIDERS THEMSELVES AS REGULATORY EXPERT," AND THEN HE

02:39PM 16 UNDER LINES, "AND THIS CULTURE MUST BE NIP IN THE BUD."

02:39PM 17 DO YOU SEE THAT?

02:39PM 18 A. YEAH, I SEE THAT.

02:39PM 19 Q. FIRST OF ALL, AS LABORATORY DIRECTOR AT THE TIME, DID YOU

02:39PM 20 FEEL QUALIFIED TO GIVE YOUR INPUT ON WHAT PROFICIENCY TESTING

02:40PM 21 SHOULD LOOK LIKE AT THE LAB?

02:40PM 22 MR. CAZARES: OBJECTION. IT CALLS FOR LEGAL

02:40PM 23 CONCLUSION TESTIMONY.

02:40PM 24 THE COURT: ARE YOU ASKING HIM HIS KNOWLEDGE OF THE

02:40PM 25 SCOPE OF HIS EMPLOYMENT?

02:40PM 1 MR. BOSTIC: EXACTLY, YOUR HONOR. I'M HAPPY TO  
02:40PM 2 REPHRASE THAT.

02:40PM 3 THE COURT: WHY DON'T YOU. THANK YOU.  
02:40PM 4 BY MR. BOSTIC:

02:40PM 5 Q. DR. PANDORI, BASED ON YOUR UNDERSTANDING OF YOUR JOB  
02:40PM 6 RESPONSIBILITIES AND THE SCOPE OF YOUR EMPLOYMENT, WAS IT PART  
02:40PM 7 OF YOUR RESPONSIBILITY TO GIVE YOUR OPINION AND INPUT ON HOW  
02:40PM 8 PROFICIENCY TESTING WAS RUN AT THERANOS?

02:40PM 9 MR. CAZARES: 702.

02:40PM 10 THE COURT: OVERRULED.

02:40PM 11 THE WITNESS: I WASN'T NEVER -- I WASN'T ENTIRELY  
02:40PM 12 CLEAR. I DIDN'T HAVE A LIST OF JOB DESCRIPTIONS AND THAT, SO I  
02:40PM 13 TOOK IT UPON MYSELF TO MAKE SURE THAT THE LAB WAS RUNNING  
02:40PM 14 PROPERLY IN ANY WAY THAT I COULD.

02:40PM 15 AND BECAUSE I HAD A LOT OF EXPERIENCE IN DIRECTING  
02:40PM 16 LABORATORY ACTIVITIES AND LOOKING AT PT'S AND I'M BOARD  
02:40PM 17 CERTIFIED AS A HIGH COMPLEXITY LABORATORY DIRECTOR, I FELT THAT  
02:41PM 18 I COULD CONTRIBUTE IN A MEANINGFUL WAY TO THIS CONVERSATION.

02:41PM 19 BY MR. BOSTIC:

02:41PM 20 Q. YOU LEFT THERANOS IN MAY 2014; IS THAT RIGHT?

02:41PM 21 A. CORRECT.

02:41PM 22 Q. DURING YOUR TIME AT THE COMPANY, DID THERANOS EVER PERFORM  
02:41PM 23 PROFICIENCY TESTING IN A WAY THAT SATISFIED YOU?

02:41PM 24 A. I DON'T RECALL I LEFT SO SOON.

02:41PM 25 Q. WAS THERANOS'S APPROACH TO PROFICIENCY TESTING PART OF THE

02:41PM 1 REASONS WHY YOU LEFT THE COMPANY?

02:41PM 2 A. IT WAS PART.

02:41PM 3 Q. THE PROBLEMS YOU SAW AT THERANOS, WERE THEY LIMITED TO THE  
02:41PM 4 EDISON DEVICE OR DID YOU ALSO SEE PROBLEMS WITH THE THERANOS  
02:41PM 5 MODIFIED THIRD PARTY DEVICES?

02:41PM 6 A. THERE WERE PROBLEMS WITH THE HACKED EQUIPMENT AS WELL.

02:42PM 7 Q. WHAT PROBLEMS DID YOU SEE WITH THOSE ITEMS?

02:42PM 8 A. WELL, THEY WERE -- THEY HAD QUALITY CONTROL ISSUES AS I  
02:42PM 9 RECALL, BUT THEY ALSO -- I HAD HEARD THAT THEY HAD GIVEN A  
02:42PM 10 NUMBER OF RESULTS THAT LED ME TO BELIEVE THAT THEY WERE  
02:42PM 11 GENERATING UNRELIABLE RESULTS.

02:42PM 12 Q. IF I COULD ASK YOU TO TURN TO TAB 1562 IN YOUR BINDER,  
02:42PM 13 PLEASE.

02:42PM 14 MR. CAZARES: I'M SORRY, WHAT NUMBER, COUNSEL?

02:42PM 15 MR. BOSTIC: 1562.

02:42PM 16 THE WITNESS: YES.

02:42PM 17 BY MR. BOSTIC:

02:42PM 18 Q. AND AT 1562, DO YOU SEE AN EMAIL CHAIN BETWEEN YOU AND  
02:42PM 19 DR. ROSENDORFF RELATING TO AN EVALUATION OF MODIFIED ANALYZERS  
02:42PM 20 AT THERANOS?

02:42PM 21 A. YES.

02:43PM 22 MR. BOSTIC: YOUR HONOR, THE GOVERNMENT OFFERS 1562.

02:43PM 23 MR. CAZARES: ONE MOMENT, YOUR HONOR.

02:43PM 24 (PAUSE IN PROCEEDINGS.)

02:43PM 25 MR. CAZARES: NO OBJECTION.

02:43PM 1 THE COURT: IT'S ADMITTED, AND IT MAY BE PUBLISHED.

02:43PM 2 (GOVERNMENT'S EXHIBIT 1562 WAS RECEIVED IN EVIDENCE.)

02:43PM 3 BY MR. BOSTIC:

02:43PM 4 Q. IF WE CAN START ON PAGE 5 AT THE BOTTOM, WE SEE THE FIRST  
02:43PM 5 EMAIL IN THIS CHAIN IS FROM SOMEONE NAMED NICHOLAS HAASE.

02:43PM 6 DO YOU SEE THAT?

02:43PM 7 A. YES.

02:43PM 8 Q. AND WHO WAS NICHOLAS HAASE?

02:43PM 9 A. MY RECOLLECTION WAS NICHOLAS HAASE WAS A CHEMIST WHO  
02:43PM 10 WORKED AT THERANOS IN THAT CHEMISTRY AREA.

02:44PM 11 Q. AND WHEN YOU SAY IN THAT P PROTOCOL?

02:44PM 12 A. P PROTOCOL.

02:44PM 13 Q. WHAT WAS P PROTOCOL AT THERANOS?

02:44PM 14 A. IT WAS A PROCESS WHERE SPECIMENS FROM NANOTAINERS WOULD BE  
02:44PM 15 HANDLED BY A ROBOT, AND PUT INTO A PLASTIC CUP, AND DILUTED,  
02:44PM 16 AND THEN PUT ON TO AN FDA CLEARED INSTRUMENT THAT HAD BEEN  
02:44PM 17 MODIFIED TO RUN DILUTED SPECIMENS.

02:44PM 18 Q. AND SO THIS WAS A PRACTICE USING NON-THERANOS EQUIPMENT,  
02:44PM 19 BUT A PRACTICE UNIQUE TO THERANOS; IS THAT RIGHT?

02:44PM 20 A. TO MY KNOWLEDGE IT WAS UNIQUE TO THERANOS.

02:44PM 21 Q. LOOKING AT PAGE 5, AND LET'S LOOK AT PAGE 6 ALSO, THE TOP  
02:44PM 22 OF PAGE 6. MR. HAASE SAYS AT THE TOP, "ATTACHED ARE THE  
02:45PM 23 TABULATED RESULTS FROM THE TECAN-DILUTED FINGERSTICK AND VENOUS  
02:45PM 24 SAMPLES FROM THIS MORNING'S STUDY, AS WELL AS THE PREDICATE  
02:45PM 25 VENOUS RESULTS."

02:45PM 1 DO YOU SEE THAT?

02:45PM 2 A. YES.

02:45PM 3 Q. WERE STUDIES LIKE THIS PERIODICALLY CONDUCTED WITHIN  
02:45PM 4 THERANOS?

02:45PM 5 A. I WOULD NOT SAY THEY WERE PERIODICALLY CONDUCTED, BUT I  
02:45PM 6 DIDN'T WORK IN THE CHEMISTRY DEPARTMENT SO I DON'T KNOW.

02:45PM 7 Q. WHAT IS YOUR UNDERSTANDING OF THE PURPOSE OF A STUDY LIKE  
02:45PM 8 THIS ONE?

02:45PM 9 A. THE PURPOSE OF A STUDY LIKE THIS WOULD BE TO SEE IF THE  
02:45PM 10 METHODOLOGY OF RUNNING THE TECAN, THE DILUTED, THE SMALL VOLUME  
02:45PM 11 SPECIMENS THAT YOU WERE COLLECTING WERE GENERATING RESULTS THAT  
02:45PM 12 WOULD COMPARE FAVORABLY OR ACCURATELY TO NORMAL SPECIMENS RUN  
02:45PM 13 IN A NORMAL MANNER AND RUN ON AN FDA CLEARED PREDICATE TEST.

02:45PM 14 Q. OKAY. LET'S LOOK AT PAGE 2 OF THIS EMAIL, AND IF WE CAN  
02:45PM 15 ZOOM IN ON KIND OF THE MIDDLE TO CAPTURE DR. ROSENDORFF'S EMAIL  
02:46PM 16 AND THEN YOURS.

02:46PM 17 A. OKAY.

02:46PM 18 Q. PERFECT. THANK YOU.

02:46PM 19 FIRST, THERE'S AN EMAIL FROM YOU AT THE BOTTOM OF THAT  
02:46PM 20 SELECTION THAT SAYS, "HAS THE QC DATA REVEALED MORE BIAS IN  
02:46PM 21 FEBRUARY THAN DECEMBER?"

02:46PM 22 AND YOU SAY, "MY SENSE IS THAT THE INSTRUMENT BIAS IS THE  
02:46PM 23 MAJOR CAUSE, AND THAT FOR SOME REASON, P PROTOCOLS ARE MORE  
02:46PM 24 SUSCEPTIBLE TO THE PROBLEM."

02:46PM 25 DO YOU SEE THAT?



02:46PM 1 A. I SEE THAT.

02:46PM 2 Q. AND DR. ROSENDORFF RESPONDS, "FOR SURE THE INSTRUMENT BIAS

02:46PM 3 IS EXACERBATED WITH THE P-PROTOCOLS."

02:46PM 4 CAN YOU EXPLAIN FOR US WHAT THAT MEANS?

02:46PM 5 A. YEAH. HE'S SAYING THAT IN A SENSE THERE'S A CHANCE FOR A

02:46PM 6 MUCH HIGHER INACCURACY IF YOU'RE RUNNING THE DELETED P PROTOCOL

02:46PM 7 COMPARED TO THE PREDICATE MACHINE, I MEAN THE PREDICATE METHOD,

02:46PM 8 SORRY.

02:46PM 9 AND THAT WITH P PROTOCOLS THAT THERE'S SOMETHING ABOUT --

02:47PM 10 THERE'S A FUNCTION ASPECT TO THE INSTRUMENT THAT IF YOU TRY TO

02:47PM 11 RUN THESE DILUTED SPECIMENS ON IT, IT DOESN'T WORK AS WELL,

02:47PM 12 JUST TO BE SORT OF PLAIN ABOUT IT.

02:47PM 13 Q. AND THE TERM "INSTRUMENT BIAS," CAN YOU GIVE US A QUICK

02:47PM 14 DEFINITION OF WHAT THAT IS REFERRING TO?

02:47PM 15 A. SO THAT THE INSTRUMENT MIGHT INTRODUCE SOME CHANGE OR

02:47PM 16 VARIATION IN A COUNT OR A MEASUREMENT, AND THAT THAT VARIATION

02:47PM 17 OR THAT AMOUNT OF CHANGE TO THE RESULT, OR MEASUREMENT I SHOULD

02:47PM 18 SAY, IS SOMEHOW EXACERBATED OR MADE MORE SERIOUS WHEN YOU RUN

02:47PM 19 THE P SPECIMENS AND THE P PROTOCOL SPECIMENS.

02:47PM 20 Q. IN OTHER WORDS, DID THE THERANOS MODIFIED VERSIONS OF

02:47PM 21 THESE DEVICES WORK WORSE THAN THE UNMODIFIED VERSIONS?

02:47PM 22 A. CAN YOU RESTATE THAT?

02:47PM 23 Q. SURE. DID THE THERANOS MODIFIED ANALYZERS WORK WORSE THAN

02:48PM 24 THE UNMODIFIED VERSIONS?

02:48PM 25 MR. CAZARES: OBJECTION. LEADING.

02:48PM 1 THE WITNESS: YEAH, THERE WAS PLENTY --

02:48PM 2 THE COURT: EXCUSE ME. IT WAS LEADING.

02:48PM 3 WHY DON'T YOU REPHRASE THE QUESTION.

02:48PM 4 MR. BOSTIC: SURE.

02:48PM 5 Q. DID THE RESULTS OF THIS EXPERIMENT TELL YOU ANYTHING ABOUT  
02:48PM 6 WHETHER THE THERANOS CHANGES TO THESE ANALYZERS MADE THEM WORK  
02:48PM 7 BETTER OR WORSE?

02:48PM 8 MR. CAZARES: ALSO LEADING.

02:48PM 9 THE COURT: OVERRULED.

02:48PM 10 THE WITNESS: IT INDICATED THAT THE THERANOS  
02:48PM 11 METHODOLOGY WORKED WORSE.

02:48PM 12 BY MR. BOSTIC:

02:48PM 13 Q. AND WAS THAT CONCERNING TO YOU AS LABORATORY DIRECTOR?

02:48PM 14 A. YES.

02:48PM 15 Q. GOING BACK TO THE EDISON SPECIFICALLY, BASED ON THE ISSUES  
02:48PM 16 THAT YOU HAD SEEN, HOW WERE YOU FEELING ABOUT THE COMPANY'S  
02:48PM 17 CONTINUED USE OF THE EDISON ANALYZERS IN THE FIRST PART OF  
02:48PM 18 2014?

02:48PM 19 A. EDISON ANALYZERS, I DIDN'T HAVE A VERY POSITIVE FEELING  
02:49PM 20 WITH REGARD TO THEIR FUNCTION AT ALL.

02:49PM 21 Q. DID YOU EVER MAKE A SUGGESTION TO ANYONE AT THERANOS ABOUT  
02:49PM 22 WHETHER THE COMPANY SHOULD CONTINUE TO USE THE EDISON OR NOT?

02:49PM 23 A. I RECOMMENDED TO DR. ROSENDORFF ON MANY OCCASIONS THAT WE  
02:49PM 24 SHOULD JUST RUN PREDICATE METHODS WHILE WE CONCENTRATE ON  
02:49PM 25 GETTING THE THERANOS TECHNOLOGIES WORKING BETTER.

02:49PM 1 AND THEN ONCE WE HAD MORE CONFIDENCE IN THE THERANOS  
02:49PM 2 METHODS, WE WOULD SWITCH, BUT UNTIL THEN WE COULD -- BECAUSE WE  
02:49PM 3 HAD A CLIA CERTIFICATE, AND WE HAD LAB DIRECTORS, AND CLINICAL  
02:49PM 4 LAB SCIENTISTS, WE HAD ALL OF THE INFRASTRUCTURE TO DO NORMAL  
02:49PM 5 PREDICATE LAB TESTING, WHY DON'T WE DO THAT UNTIL WE FEEL MORE  
02:49PM 6 CONFIDENCE IN THE THERANOS METHODS.

02:49PM 7 Q. SO IF YOUR RECOMMENDATION HAD BEEN ADOPTED, WOULD THERANOS  
02:49PM 8 HAD BEEN USING THE EDISON FOR ANY PATIENT TESTING AT ALL DURING  
02:49PM 9 THAT PERIOD?

02:49PM 10 A. NO.

02:49PM 11 IN MY RECOMMENDATION, WHAT I'M SAYING IS THAT THE EDISON  
02:50PM 12 SHOULD BE CONSIDERED RESEARCH EQUIPMENT AND THAT THEY SHOULD BE  
02:50PM 13 WORKED ON UNTIL ACCURACY AND PRECISION CAN BE IMPROVED, AND  
02:50PM 14 ONLY WHEN THAT'S BEEN ACHIEVED WOULD WE START TO USE THEM ON  
02:50PM 15 PATIENT TESTING.

02:50PM 16 BUT IN THE MEANTIME WE COULD RUN -- BECAUSE WE ALREADY HAD  
02:50PM 17 THIS EQUIPMENT, AND WE HAD EVERYTHING IN PLACE TO DO DIAGNOSTIC  
02:50PM 18 TESTING ON VENOUS SPECIMENS, WE COULD REMAIN A DIAGNOSTIC  
02:50PM 19 LABORATORY UNTIL THAT WAS ACHIEVED.

02:50PM 20 Q. THE ONLY DIFFERENCE WOULD BE THAT THE COMPANY WOULDN'T BE  
02:50PM 21 USING ITS HOME GROWN ANALYZER; CORRECT?

02:50PM 22 A. THAT WOULD BE, THAT WOULD BE ONE DIFFERENCE.

02:50PM 23 THE OTHER DIFFERENCE WOULD BE THAT YOU WOULDN'T BE DRAWING  
02:50PM 24 INTO THE NANOTAINER.

02:50PM 25 Q. OKAY. CAN YOU TELL US WHAT THE NANOTAINER WAS IN THIS

02:50PM 1 CONTEXT?

02:50PM 2 A. A PLASTIC VIAL ABOUT THAT BIG WITH A RUBBER PLUG ON THE

02:50PM 3 TOP THAT WOULD CONNECT TO AN APPARATUS THAT ALLOWED ONE TO DO A

02:50PM 4 FINGERSTICK AND DRAW BLOOD DIRECTLY INTO THE NANOTAINER

02:50PM 5 (INDICATING) .

02:50PM 6 Q. AND WAS THE NANOTAINER A THERANOS SPECIFIC DEVICE?

02:51PM 7 A. YES.

02:51PM 8 Q. SO YOUR OPINION OR YOUR RECOMMENDATION THAT THE COMPANY

02:51PM 9 SHOULD STOP USING THE EDISON ALTOGETHER AT LEAST UNTIL THE

02:51PM 10 PROBLEMS WERE ADDRESSED, DO YOU KNOW WHETHER THAT

02:51PM 11 RECOMMENDATION EVER MADE ITS WAY TO MR. BALWANI?

02:51PM 12 MR. CAZARES: OBJECTION. IT CALLS FOR HEARSAY,

02:51PM 13 SPECULATION, AND FOUNDATION.

02:51PM 14 THE COURT: IF YOU CAN LAY A FOUNDATION WITHOUT

02:51PM 15 ASKING FOR HEARSAY.

02:51PM 16 MR. BOSTIC: I THINK MY NEXT QUESTION WILL LAY THE

02:51PM 17 FOUNDATION.

02:51PM 18 Q. DID YOU EVER DISCUSS OR WERE YOU EVER IN A CONVERSATION

02:51PM 19 WITH MR. BALWANI ABOUT THE RECOMMENDATION THAT YOU HAD MADE TO

02:51PM 20 STOP USING THE EDISONS?

02:51PM 21 A. YES.

02:51PM 22 Q. OKAY. SO TELL US ABOUT THAT? HOW DID THAT CONVERSATION

02:51PM 23 TAKE PLACE?

02:51PM 24 A. I BELIEVE I MENTIONED IT TO HIM IN HIS OFFICE THAT WE

02:51PM 25 COULD DO THAT, AND ALSO AT ANOTHER TIME WHEN WE WERE LOOKING AT

02:52PM 1 SOME SPACE TO PUT A LOT OF OLD -- A LOT OF PREDICATE EQUIPMENT  
02:52PM 2 IN TO RUN VENOUS TESTING TO CREATE ANOTHER LAB JUST FOR VENOUS  
02:52PM 3 TESTING, AND I HAD MENTIONED IT AT THAT TIME AS WELL.

02:52PM 4 Q. AND WAS THERE A TIME WHEN MR. BALWANI VISITED YOU IN YOUR  
02:52PM 5 OFFICE TO DISCUSS THOSE --

02:52PM 6 A. YES.

02:52PM 7 Q. TELL US ABOUT THAT.

02:52PM 8 A. WHEN HE CAME, I BELIEVE WITH TWO OTHER PROJECT MANAGERS,  
02:52PM 9 AND TOLD ME THAT THAT WOULDN'T HAPPEN. HE WAS UPSET.

02:52PM 10 Q. WAS THAT ON THE SAME DAY THAT YOU HAD RAISED THIS ISSUE TO  
02:52PM 11 HIM IN THE FIRST PLACE? DO YOU RECALL THE TIMING THERE?

02:52PM 12 A. I DON'T THINK IT WAS THE SAME DAY, BUT I DON'T REMEMBER  
02:52PM 13 THE DISTANCE CHRONOLOGICALLY BETWEEN MY RECOMMENDATION TO HIM  
02:52PM 14 OR THE TIME I SAID IT TO ADAM -- I'M SORRY, DR. ROSENDORFF.

02:52PM 15 Q. AND WHEN MR. BALWANI CAME TO VISIT YOU IN YOUR OFFICE, YOU  
02:52PM 16 SAID WITH THE TWO PROJECT MANAGERS, WAS THAT THEN A DISCUSSION  
02:52PM 17 WHERE YOU HAD A BACK AND FORTH ABOUT WHETHER THIS SHOULD BE  
02:53PM 18 DONE OR NOT, OR WAS IT MR. BALWANI RELAYING HIS DECISION TO  
02:53PM 19 YOU?

02:53PM 20 A. WELL, THAT WAS A RELAY OF HIS DECISION. THERE WASN'T ANY  
02:53PM 21 BACK AND FORTH.

02:53PM 22 Q. AND WHAT WAS THE TONE?

02:53PM 23 A. HE WAS UPSET. ANGRY.

02:53PM 24 Q. AND AROUND THAT TIME WHEN MR. BALWANI TOLD YOU THAT THE  
02:53PM 25 COMPANY WAS NOT GOING TO STOP USING THE EDISON, DID YOU THINK

02:53PM 1 ABOUT ELEVATING THAT ISSUE TO MS. HOLMES, THE CEO OF THE  
02:53PM 2 COMPANY?

02:53PM 3 A. NO.

02:53PM 4 Q. WHY NOT?

02:53PM 5 A. UM, I CONSIDERED MR. BALWANI AND ELIZABETH TO BE UNIFIED  
02:53PM 6 IN ALL OF THEIR DECISION MAKING PROCESSES.

02:53PM 7 Q. AND WHAT WAS THAT IMPRESSION BASED ON?

02:53PM 8 A. WELL, WHEN WE HAD ENGAGED IN THE PT CONTROVERSY THAT WE  
02:53PM 9 WENT OVER EARLIER, THEY WERE UNIFIED IN THAT.

02:54PM 10 WHEN I WOULD ATTEND MEETINGS IN WHICH BOTH WERE PRESENT,  
02:54PM 11 THEY PRESENTED A UNIFIED FRONT ON ALL OPINIONS AND DECISIONS.

02:54PM 12 THEY SEEMED TO GET ALONG REALLY WELL WITH ONE ANOTHER WHEN  
02:54PM 13 I COULD SEE THEM TOGETHER.

02:54PM 14 AND I NEVER HEARD OF AN INSTANCE IN THE LAB WHERE ONE HAD  
02:54PM 15 MADE A DECISION AND THE OTHER HAD MADE A DIFFERENT DECISION.

02:54PM 16 Q. OKAY. SO WE'VE TALKED JUST NOW ABOUT MR. BALWANI'S  
02:54PM 17 RESPONSE TO YOUR SUGGESTION THAT THE EDISON BE TAKEN OUT OF  
02:54PM 18 USE.

02:54PM 19 WAS THAT CONSISTENT WITH OR INCONSISTENT WITH THE WAY THAT  
02:54PM 20 MR. BALWANI GENERALLY RESPONDED TO BAD NEWS AT THE COMPANY IN  
02:54PM 21 YOUR EXPERIENCE?

02:54PM 22 A. THAT WAS CONSISTENT.

02:54PM 23 Q. WHY DO YOU SAY THAT?

02:54PM 24 A. HE HAD A TEMPER, AND HE SHOWED IT TO A LOT OF PEOPLE WHEN  
02:54PM 25 HE DISAGREED WITH THEM.

02:54PM 1 MR. BOSTIC: YOUR HONOR, I'M ABOUT TO MOVE TO A  
02:54PM 2 DIFFERENT TOPIC.

02:55PM 3 NOW MIGHT BE A GOOD TIME TO BREAK FOR THE DAY.

02:55PM 4 THE COURT: LET'S DO THAT THEN. THANK YOU.

02:55PM 5 LADIES AND GENTLEMEN, WE'LL TAKE OUR RECESS NOW. PLEASE  
02:55PM 6 RECALL THAT WE'RE NOT IN SESSION TOMORROW, THURSDAY, BUT WE  
02:55PM 7 WILL BE IN SESSION FRIDAY MORNING, FRIDAY MORNING AT 9:00 A.M.

02:55PM 8 PLEASE LET ME REMIND YOU OF THE ADMONISHMENT, DO NOT DO  
02:55PM 9 ANY INDEPENDENT RESEARCH, DO NOT DISCUSS WITH ANYONE, DO NOT  
02:55PM 10 READ, LISTEN, OR WATCH ANYTHING ABOUT THIS, AND DO NOT IN ANY  
02:55PM 11 WAY HAVE ANYTHING ABOUT THIS CASE COME TO YOUR ATTENTION.

02:55PM 12 I'LL ASK YOU THAT QUESTION AGAIN FRIDAY, AS YOU KNOW.

02:55PM 13 HAVE A GOOD EVENING, LADIES AND GENTLEMEN. IT'S GOOD TO  
02:55PM 14 SEE YOU AGAIN.

02:55PM 15 DOCTOR, IF YOU COULD COME BACK TOMORROW AT 9:00 A.M.,  
02:55PM 16 PLEASE.

02:55PM 17 MR. BOSTIC: FRIDAY.

02:55PM 18 THE COURT: FRIDAY. EXCUSE ME.

02:55PM 19 THE WITNESS: UNDERSTOOD.

02:55PM 20 (JURY OUT AT 2:55 P.M.)

02:56PM 21 THE COURT: PLEASE BE SEATED. THANK YOU.

02:56PM 22 YOU CAN LEAVE, SIR. THANK YOU.

02:56PM 23 ALL RIGHT. THE RECORD SHOULD REFLECT THAT THE JURY HAS  
02:56PM 24 LEFT FOR THE DAY. THE WITNESS HAS LEFT THE COURTROOM.

02:56PM 25 ANYTHING FURTHER BEFORE WE BREAK FOR THE EVENING, COUNSEL?

02:56PM 1 MR. BOSTIC: NOT FROM THE GOVERNMENT, YOUR HONOR.

02:56PM 2 MR. COOPERSMITH: I HAVE ONE SMALL ISSUE,

02:56PM 3 YOUR HONOR.

02:56PM 4 THE COURT: SURE.

02:56PM 5 MR. COOPERSMITH: I THINK IT'S SMALL.

02:56PM 6 AND I JUST WANTED TO ASK IF THE COURT WOULD LIKE SOME

02:56PM 7 ADDITIONAL BRIEFING ON THIS OR SOMETHING, BUT HERE'S OUR

02:56PM 8 DIFFERENCE OF VIEWS:

02:56PM 9 SO WE THINK THE TESTIMONY THAT DR. PANDORI GAVE IN LARGE

02:56PM 10 PART, AND ALSO THE TESTIMONY FROM MS. CHEUNG, AND WE THINK THIS

02:57PM 11 WILL REOCCUR AGAIN IN TRIAL WITH OTHER WITNESSES SUCH AS

02:57PM 12 DR. ROSENDORFF IF HE'S CALLED, WE THINK IT'S EXPERT TESTIMONY.

02:57PM 13 AND IF THE GOVERNMENT IS NOT CALLING THESE WITNESSES AS

02:57PM 14 EXPERTS, THE FACT IS -- CERTAINLY IT'S TRUE THAT SOMEONE OF

02:57PM 15 DR. PANDORI'S TRAINING AND BACKGROUND, HE KNOWS A LOT ABOUT THE

02:57PM 16 LAB INDUSTRY. HE IS PROBABLY QUALIFIED TO BE AN EXPERT IF

02:57PM 17 THAT'S WHAT THE GOVERNMENT WAS TRYING TO DO.

02:57PM 18 BUT THEY'RE NOT TRYING TO DO THAT.

02:57PM 19 SO THE FACT THAT HE HAS AN UNDERSTANDING FROM HIS TRAINING

02:57PM 20 OR FROM HIS JOB, IN OUR VIEW, DOES NOT MEAN THAT HE CAN TESTIFY

02:57PM 21 AS AN EXPERT.

02:57PM 22 AND, LIKE, FOR EXAMPLE, WITH MS. CHEUNG, AND THERE WERE

02:57PM 23 OBJECTIONS MADE DURING THE COURSE OF MS. CHEUNG'S TESTIMONY,

02:57PM 24 THE FACT THAT SHE HAS AN UNDERSTANDING OF SOMETHING BECAUSE

02:57PM 25 SHE, LIKE, READ THINGS OR IT DOESN'T MEAN THAT SHE'S GOING TO



02:57PM 1 BE TESTIFYING AS AN EXPERT.

02:57PM 2 SO I THINK RESPECTFULLY, THE OBJECTIONS THAT THE COURT HAS  
02:57PM 3 BEEN OVERRULING ON THESE EXPERT ISSUES WE THINK ARE --

02:57PM 4 THE COURT: YOU TAKE DIFFERENCE WITH?

02:58PM 5 MR. COOPERSMITH: WE DO.

02:58PM 6 THE COURT: MR. BOSTIC, WHAT DO YOU THINK?

02:58PM 7 MR. BOSTIC: SO, YOUR HONOR, I NOTE THAT THE PARTIES  
02:58PM 8 DID BRIEF THESE ISSUES IN MOTIONS IN LIMINE SPECIFICALLY  
02:58PM 9 ADDRESSING SOME OF THE CONTENT OF TESTIMONY BY THESE SAME  
02:58PM 10 WITNESSES IN THE PREVIOUS TRIAL.

02:58PM 11 MY UNDERSTANDING OF THE COURT'S RULING IS THAT IT  
02:58PM 12 DISAGREED WITH THE DEFENSE'S INTERPRETATION OF THE RULES AND  
02:58PM 13 WHERE THE LINE IS BETWEEN EXPERT AND PERCIPIENT TESTIMONY.

02:58PM 14 I THINK THE COURT GOT IT RIGHT IN THAT ORDER, AND I THINK  
02:58PM 15 THE COURT IS ADHERING TO THAT SAME STANDARD HERE.

02:58PM 16 I THINK THESE WITNESSES, SIMPLY BECAUSE THEY WORKED IN A  
02:58PM 17 TECHNICAL FIELD DOESN'T MEAN THAT EVERY TIME THEY TALK ABOUT  
02:58PM 18 THEIR JOB OR THE SCOPE OF THEIR JOB, WHAT THEY DID, WHAT THEY  
02:58PM 19 SAW, IT DOESN'T SHIFT THAT INTO EXPERT TESTIMONY JUST BECAUSE  
02:58PM 20 WE'RE TALKING ABOUT THE TECHNICAL AREA.

02:58PM 21 THE QUESTIONS, AND I THINK THE ANSWERS, ARE LIMITED AND  
02:58PM 22 FORMULATED TO FOCUS ONLY ON WHAT THE WITNESSES SAW AND TO DRAW  
02:58PM 23 ON NOT THEIR TRAINING BUT THEIR EXPERIENCE AT THE SPECIFIC JOBS  
02:59PM 24 THAT THEY'RE TESTIFYING ABOUT.

02:59PM 25 MR. COOPERSMITH: YOUR HONOR, OUR POINT IS SIMPLY

02:59PM 1 THAT WHEN A WITNESS, AND YOU JUST HEARD THIS WITH DR. PANDORI,  
02:59PM 2 WHEN THEY MOVE TO SAYING, OKAY, YES, I OBSERVED CERTAIN DATA,  
02:59PM 3 THIS IS THE DATA THAT CAME OUT OF THE QUALITY CONTROL PROCESS,  
02:59PM 4 THAT IS SOMETHING THAT THEY OBSERVED. THAT'S NOT THE ISSUE.

02:59PM 5 BUT WHEN THEY MOVE FROM THAT TO SAY, IN MY VIEW, I THINK  
02:59PM 6 THAT AFFECTS THE ACCURACY OF PATIENT RESULTS BECAUSE, AND THEY  
02:59PM 7 GIVE AN EXPLANATION, THAT'S WHERE IT MOVES INTO EXPERT  
02:59PM 8 TESTIMONY.

02:59PM 9 I THINK WE HAVE THE SAME PROBLEM WITH MS. CHEUNG.

02:59PM 10 BUT I KNOW THAT WE DON'T HAVE TRIAL TOMORROW, AND YOU, YOU  
02:59PM 11 KNOW, WITH THE COURT'S PERMISSION, WE WOULD LIKE TO BRIEF THIS  
02:59PM 12 A LITTLE MORE.

02:59PM 13 THE REASON IS THAT WHEN I GO BACK AND THINK BACK TO THE  
02:59PM 14 MIL RULING, WHICH OBVIOUSLY WE RESPECT THE COURT'S RULING, WHAT  
02:59PM 15 I REMEMBER ABOUT THAT RULING IS THAT THE COURT LARGELY DEFERRED  
02:59PM 16 TO ON-THE-SPOT OBJECTIONS DURING TESTIMONY.

02:59PM 17 THE COURT: AND THAT'S WHAT I RULED ON TODAY,  
02:59PM 18 ON-THE-SPOT OBJECTIONS.

03:00PM 19 MR. COOPERSMITH: ABSOLUTELY, YOUR HONOR, AND THAT'S  
03:00PM 20 THE WAY TRIAL WORKS.

03:00PM 21 BUT AGAIN, WE RESPECTFULLY THINK THAT AS FAR AS WHAT THE  
03:00PM 22 COURT'S COMMENTS ARE, IT SEEMS TO BE BASED ON THE FACT THAT THE  
03:00PM 23 WITNESS DOES, IN FACT, OR AT LEAST TESTIFIES THAT THE WITNESS  
03:00PM 24 HAS AN UNDERSTANDING BASED ON THEIR BACKGROUND AND EXPERIENCE  
03:00PM 25 OR EVEN TRAINING AT THERANOS.

03:00PM 1 WE DON'T THINK THAT ALLOWS A PERSON WHO IS NOT BEING  
03:00PM 2 PRESENTED AS AN EXPERT, OR EVEN SOMEONE WHO IS NOT NOTICED AS  
03:00PM 3 AN EXPERT, TO MOVE INTO THE REALM OF EXPERT TESTIMONY, EVEN IF  
03:00PM 4 THEY KNOW IT. I KNOW A LOT OF THINGS OR I THINK I KNOW A LOT  
03:00PM 5 OF THINGS, IT DOESN'T MEAN THAT I CAN TESTIFY AT TRIAL THAT I'M  
03:00PM 6 AN EXPERT ON THAT.

03:00PM 7 THAT'S OUR POINT.

03:00PM 8 THE COURT: WELL, I APPRECIATE THAT.

03:00PM 9 I GUESS IF WILLIE MAYS WERE CALLED, HE WOULDN'T HAVE TO  
03:00PM 10 SAY I'M AN EXPERT IN BASEBALL TO TELL YOU WHAT HAPPENS WHEN HE  
03:00PM 11 HITS A FASTBALL OVER THE FENCE IN CENTERFIELD THAT IT'S A HOME  
03:00PM 12 RUN.

03:00PM 13 MR. COOPERSMITH: THE PROBLEM WOULD COME,  
03:00PM 14 YOUR HONOR, WHEN HE STARTS TO TALK ABOUT HOW THE SPIN ON THE  
03:00PM 15 BASEBALL AND THE VELOCITY AS A MATTER OF PHYSICS AND THE BALL  
03:00PM 16 GOES OVER THE FENCE, RIGHT?

03:00PM 17 THE COURT: SURE. I HAVEN'T HEARD THAT TYPE OF  
03:00PM 18 TESTIMONY FROM THESE WITNESSES, AND THAT'S WHY I HAVE MADE THE  
03:00PM 19 RULINGS THAT I HAVE ON THE OBJECTIONS.

03:01PM 20 I DON'T THINK IT IS, JUST TO -- AND THANKS FOR LETTING ME  
03:01PM 21 GET INTO BASEBALL, BUT I DON'T SEE THAT THE TESTIMONY, THE  
03:01PM 22 QUESTIONS THAT HAVE BEEN ASKED HAVE REALLY CALLED UPON PURE  
03:01PM 23 EXPERT TESTIMONY OR EXPERT TESTIMONY.

03:01PM 24 THE QUESTIONS -- AND I'VE SAID, AND YOU'VE HEARD ME  
03:01PM 25 QUALIFY SOME OF MR. BOSTIC'S QUESTIONS WERE BASED ON WHAT SHE

03:01PM 1 WAS TRAINED, BASED ON THE WITNESS'S EXPERIENCE, AND THE WITNESS  
03:01PM 2 CAN TESTIFY BASED ON THEIR EXPERIENCE THIS IS WHAT I SAW, THIS  
03:01PM 3 IS WHAT I OBSERVED. AND THAT'S WHAT I HAVE HEARD.

03:01PM 4 I HAVE NOT HEARD, IN MY OPINION, A WITNESS OPINE AS AN  
03:01PM 5 EXPERT GIVING EXPERT OPINION THAT REQUIRE A 702 TYPE OF  
03:01PM 6 FOUNDATION.

03:01PM 7 THE DOCTORS CAN TESTIFY ABOUT THEY TALKED ABOUT WHAT THEY  
03:01PM 8 WERE HIRED TO DO, AND EXPLAIN WHAT HE DID, THAT'S WHY I RULED  
03:01PM 9 ON WHAT I DID. IN THE COURT'S VIEW, THE WITNESS WAS EXPLAINING  
03:02PM 10 THAT'S MY DUTIES, THAT'S WHAT I DID.

03:02PM 11 THE WITNESS DID NOT TALK ABOUT IN DETAIL ABOUT THE  
03:02PM 12 ANALYSIS. THERE WERE SOME QUESTIONS BY YOU AND OTHERS ABOUT  
03:02PM 13 WHAT DOES THAT MEAN, HOW DOES THAT WORK.

03:02PM 14 I SUPPOSE WHEN YOU WERE ASKING MS. CHEUNG ABOUT THE LIS,  
03:02PM 15 THAT WOULD BE EXPERT TESTIMONY, TOO. WHAT DOES IT DO? HOW  
03:02PM 16 DOES IT CAPTURE IT? WHAT DOES IT DO? THOSE TYPES OF THINGS.

03:02PM 17 BUT THOSE ARE JUST WHAT SHE KNOWS FROM HER PERSONAL  
03:02PM 18 KNOWLEDGE OF HOW THAT DATABASE WOULD CAPTURE AND RECEIVE THAT  
03:02PM 19 INFORMATION IN THE SAME TONE. THAT'S HOW I'VE PERCEIVED THE  
03:02PM 20 ANSWERS AND THE QUESTIONS.

03:02PM 21 BUT I'M NOT GOING TO TELL YOU DON'T OBJECT. OF COURSE YOU  
03:02PM 22 HAVE TO OBJECT.

03:02PM 23 MR. COOPERSMITH: AND THANK YOU FOR THAT,  
03:02PM 24 YOUR HONOR. WE APPRECIATE THAT. OBVIOUSLY WE'RE TRYING TO DO  
03:02PM 25 OUR JOB.

03:02PM 1 WITH RESPECT TO MS. CHEUNG, JUST USING THE COURT'S  
03:02PM 2 EXAMPLE, IF SHE KNEW FROM HER EXPERIENCE THAT THE LIS CONTAINED  
03:02PM 3 CERTAIN DATA OR YOU COULD GET A CERTAIN OUTPUT FROM IT, THAT'S  
03:02PM 4 JUST BASED ON HER EXPERIENCE.

03:02PM 5 BUT, ON THE OTHER HAND, IF SHE'S SAYING, WELL, I SAW  
03:03PM 6 QUALITY CONTROL FAILURES AT THERANOS. SO FAR SO GOOD. NOT  
03:03PM 7 EXPERT TESTIMONY. SHE'S JUST SAYING THAT'S WHAT SHE OBSERVED,  
03:03PM 8 RIGHT?

03:03PM 9 BUT THEN WHEN YOU MOVE FROM THAT INTO, WELL, I BELIEVE  
03:03PM 10 THAT THAT WOULD MAKE PATIENT TESTING INACCURATE, AND  
03:03PM 11 DR. PANDORI IS SAYING THE SAME WAY.

03:03PM 12 THAT IS BASED ON A VIEW THAT, YOU KNOW, I THINK THAT EVEN  
03:03PM 13 IF THE MACHINE PASSED QC, IT STILL IS GOING TO PRODUCE  
03:03PM 14 INACCURATE RESULTS BECAUSE, YOU KNOW, WHO KNOWS WHAT IS GOING  
03:03PM 15 ON WITH THE MACHINE.

03:03PM 16 I MEAN, AT THAT POINT YOU'RE GETTING INTO THE REALM OF  
03:03PM 17 EXPERT TESTIMONY.

03:03PM 18 THE COURT: SURE.

03:03PM 19 MR. COOPERSMITH: WITH THE COURT'S PERMISSION, I  
03:03PM 20 KNOW THAT THESE ARE NOT ALWAYS EASY ISSUES, AND WE OBVIOUSLY  
03:03PM 21 RESPECT THE COURT'S ROLE, AND I SAY THIS WITH THE DEEPEST  
03:03PM 22 RESPECT FOR THE COURT --

03:03PM 23 THE COURT: WHAT I'M SAYING IS, IN YOUR EXAMPLE OF  
03:03PM 24 MS. CHEUNG -- PARDON ME FOR INTERRUPTING YOU -- WHAT I HEARD  
03:03PM 25 HER SAY IN ESSENCE WAS THIS INFORMATION THAT WENT INTO A

03:03PM 1 MACHINE, IF IT WAS CORRUPTED OR FOR WHATEVER REASON IT WAS BAD,  
03:03PM 2 IT'S GOING TO GIVE A BAD RESULT. THAT'S, THAT'S THE NATURE OF  
03:04PM 3 THINGS. THAT'S HOW IT WORKS.

03:04PM 4 SHE DIDN'T TESTIFY ABOUT THE ANALYSIS AND WHY ALL OF THE  
03:04PM 5 REAGENTS WOULD REACT DIFFERENTLY, SHE DIDN'T TALK ABOUT THE  
03:04PM 6 MOLECULAR CORRUPTION THAT WOULD THEN INDICATE HOW THAT WOULD  
03:04PM 7 WORK.

03:04PM 8 IT WAS KIND OF LIKE BAD INFORMATION IN, BAD INFORMATION  
03:04PM 9 OUT.

03:04PM 10 MR. COOPERSMITH: RIGHT.

03:04PM 11 THE COURT: I DON'T THINK THAT THAT NEEDS -- AND I  
03:04PM 12 DON'T THINK THE JURY WOULD BE HELPED UNDER 702 TO THEIR  
03:04PM 13 UNDERSTANDING OF THIS, AND WHICH IS THE BASIS OF 702, ONE OF  
03:04PM 14 THEM, TO ALLOW THE JURY TO APPRECIATE AND CAPTURE THE TENOR,  
03:04PM 15 THE NATURE, AND THE QUALITY OF THE TESTIMONY. AND BASED ON THE  
03:04PM 16 QUESTIONS THAT HAVE BEEN ASKED AROUND THAT, IT DIDN'T REQUIRE  
03:04PM 17 702 EXPERTISE.

03:04PM 18 I'M NOT SAYING THAT THESE JURORS KNOW EVERYTHING ABOUT  
03:04PM 19 EDISON MACHINES OR BLOOD TESTING.

03:04PM 20 BUT SO FAR THE WAY THE WITNESSES, AND INCLUDING YOUR  
03:04PM 21 QUESTIONS ON CROSS HAVE BEEN ASKED, I THINK YOU'RE FOLLOWING  
03:05PM 22 AND LISTENING TO THE COURT'S PRELIMINARY INSTRUCTIONS TO THE  
03:05PM 23 JURY WHEN I SAID THAT THEY WILL TRY TO OR AT LEAST MY VOIR  
03:05PM 24 DIRE, THEY WILL TRY TO MAKE IT ACCESSIBLE, AND YOU'VE DONE --  
03:05PM 25 YOU'RE BOTH DOING A GOOD JOB AT THAT.

03:05PM 1 MR. COOPERSMITH: CERTAINLY WE'RE TRYING,  
03:05PM 2 YOUR HONOR. THANK YOU.  
03:05PM 3 WHAT WE WOULD LIKE TO DO IS TO LOOK BACK AT THE  
03:05PM 4 TRANSCRIPT, RIGHT? BECAUSE WE MIGHT READ IT AND CONCLUDE WE  
03:05PM 5 DON'T HAVE A DISAGREEMENT.  
03:05PM 6 BUT I'D LIKE TO LOOK BACK AT THE TRANSCRIPT AND TRY TO  
03:05PM 7 POINT OUT --  
03:05PM 8 THE COURT: DO YOU WANT TO MEET AT 8:30 ON FRIDAY?  
03:05PM 9 IS THAT WHAT YOU'RE ASKING?  
03:05PM 10 MR. COOPERSMITH: I THINK THAT WOULD BE HELPFUL,  
03:05PM 11 YOUR HONOR.  
03:05PM 12 THE COURT: OKAY. SEE YOU THEN.  
03:05PM 13 MR. COOPERSMITH: THANK YOU.  
03:05PM 14 MR. BOSTIC: THANK YOU, YOUR HONOR.  
03:05PM 15 THE CLERK: COURT IS ADJOURNED.  
03:05PM 16 (COURT ADJOURNED AT 3:05 P.M.)

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CERTIFICATE OF REPORTER

I, THE UNDERSIGNED OFFICIAL COURT REPORTER OF THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF CALIFORNIA, 280 SOUTH FIRST STREET, SAN JOSE, CALIFORNIA, DO HEREBY CERTIFY:

THAT THE FOREGOING TRANSCRIPT, CERTIFICATE INCLUSIVE, IS A CORRECT TRANSCRIPT FROM THE RECORD OF PROCEEDINGS IN THE ABOVE-ENTITLED MATTER.

A handwritten signature in black ink that reads "Irene Rodriguez". The signature is written in a cursive, flowing style with a large, decorative flourish at the end of the last name.

IRENE RODRIGUEZ, CSR, RMR, CRR  
CERTIFICATE NUMBER 8074

DATED: MARCH 30, 2022